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PROCEEDINGS

OF THE

North Carolina Dental Society

ANNUAL MEETINGS

1906, 1907, 1908

COMPILED BY

J. MARTIN FLEMING

RALEIGH
COMMERCIAL PRINTING COMPANY
1912

Thirty-Second Annual Meeting

OF THE

North Carolina Dental Society

HELD AT

High Point, N. C.
June 20-22 1906

The thirty-second annual meeting of the North Carolina Dental Society was held at High Point, N. C., June 20-22, 1906.

President J. S. Betts, of Greensboro, presiding.

The Address of Welcome was delivered by Prof. C. F. Tomlinson, and was responded to by Dr. H. D. Harper, Sr., of Kinston.

The Secretary called the roll of members, and fifty-six responded to their names.

On motion the reading of the minutes of the previous meeting was dispensed with.

The President of the Society, Dr. J. S. Betts, then read his address:

PRESIDENT'S ADDRESS.

DR. J. S. BETTS.

Members of the North Carolina Dental Society:

It is with peculiar pleasure that I greet you at this the Thirty-second Annual Meeting of the North Carolina Dental Society.

We are fortunate in gathering together here in this hospitable, progressive little city of but a decade's growth—the Grand Rapids of the South, with its bracing atmosphere, its splendid water system, its excellent hotel accommodations, which include all the "creature comforts." We anticipate a most pleasant, profitable meeting. We have

left our homes and offices in the various sections of this State to come here to spend a while in deliberating for the common good of our profession. We look forward to these annual meetings with pleasing anticipation. The hearty handshake of friends of long acquaintance, the friendly greetings of brothers united in one common purpose, and the close association here afforded furnish memory a pleasing opportunity of storing up for future use recollections that will brighten many a dark day for us.

As I look into your faces I fancy that I can read in them the record of a good year—a year of prosperity and happiness, and for the most part free from petty worries and jealousies. I note here and there a face the lines of which are a little deeper drawn than they were a year ago. I fancy that I discover that the shoulders are just a trifle more stooped. If these outward indications are only the inevitable and unmistakable evidences of the approach of the "sear and yellow leaf," I trust that you are "wearing the white flower of a blameless life and bearing without abuse the grand old name of gentleman." If those deep lines and those stooped shoulders are premature and tell of financial struggles, of privations, of deep-seated care, of responsibilities that weigh heavily, of disappointed ambitions, of burdens grievous to be borne, I am sure that you have played the man through it all, and will with renewed zeal and stronger purpose continue the struggle of life.

"For the man worth while
Is the man who can smile
When everything goes dead wrong."

It is not my purpose in this address to attempt to picture to you high ideals; to tell of the inevitable results of entertainment of lofty purpose; to urge you to yield yourselves unreservedly to the beckonings of ambition; to "listen with credulity to the whispers of fancy and pursue with eagerness the phantoms of hope"; nor do I purpose pointing out to you the road which leads to success. Others have done this before me. Their deliverances along this line have been well timed and well received, as well as far-reaching in effect. I will say, however, that in striving towards success we must not forget that it means infinitely more to us to *deserve* success rather than to command it. The world's greatest poet and thinker centuries ago clothed this sentiment in language that will never die:

"It is not in mortals to command success,
But we'll do more, Sempronius; we'll deserve it."

It is my purpose to briefly speak of the profession of dentistry in North Carolina from its earliest existence, naming a few of the men who practised in the State during those early days, and who set high standards for those who came after to follow.

After diligent research from every available source, I find nothing recorded or traditional to warrant the belief that dentistry was practised in North Carolina earlier than 1833—certainly not before 1830. Among the early practitioners were to be found men of culture and refinement, having had in several instances educational advantages sufficient to qualify them to enter any of the learned professions. In this respect the fathers of dentistry in this State would compare favorably with their successors. The practitioner of the 30's and 40's labored under many disadvantages and encountered many difficulties unknown to us; but, notwithstanding all, they accomplished a great deal in their day, the more frugal among them being able to accumulate property and even a nice competency. It is due them that we consider their environments ere we criticise their methods of conducting practice, and to credit them with some ambition as well as due regard for humanity. They were doubtless governed by the same principles that actuate the rank and file of the profession to-day. With all the drawbacks, the proficiency to which some of the early dentists in North Carolina attained was wonderful, especially in the art of filling teeth with gold. So expert were a few men in the State in the manipulation of gold foil that attempts to restore contour to a degree were made. How well they succeeded is proven by isolated cases of smooth, well-polished fillings seen forty and fifty years after insertion. The cohesive properties of gold were then unknown, and the only reliance was soft or noncohesive gold, anchored and impacted by the process of wedging. Others excelled in prosthetic or mechanical dentistry, which consisted almost entirely in making plates for artificial dentures from gold and silver. Samples of that class of work from North Carolina dentists show exceptional skill and are models of skill and neatness, comparing favorably, and surpassing in many instances much of the same class of work at the present day.

During the Civil War (1861-65) it was with great difficulty and at enormous expense that dental materials could be obtained, especially gold foil. Dr. B. F. Arrington, of Goldsboro, and the late Dr. J. W. Hunter, of Winston-Salem, planned jointly to secure an invoice of gold foil through blockade runners plying between Wilmington, N. C., and Nassau, but that was an exceptional case. Amalgam was made at that time from filings from Mexican dollars. Tin foil was the "stand-by," and there are tin fillings in teeth now doing service that were inserted during 1861-65.

Those who made up the patrons of the earlier dentists were the wealthy and cultured classes, whose confidence and esteem were enlisted because of the intelligence and high character of the average dentist of that period. Only a comparatively small portion of the population of North Carolina—as was the case in all slave-holding States—were able to pay the fees exacted by dentists for their services, which were exorbitant, compared with the present. It was therefore necessary for the dentist to itinerate or travel over considerable

territory to find employment. Usually those early practitioners had their central offices in the larger centers of population and traffic, and when not employed by those living there they made visits to the smaller towns and villages.

About 1834, Dr. Sterling Wheaton located in Raleigh, practising there for some years and afterwards removing to Tennessee. He was succeeded there by Dr. W. R. Scott.

Dr. J. W. Howlett, who graduated in 1843 from the Baltimore College of Dental Surgery, located in Greensboro and practised there for a number of years.

Dr. E. R. Hubbard came from Virginia to New Bern, N. C., and located for the practise of dentistry in 1835. He was a man of ability and scholarly attainments and a first-class operator.

Dr. W. F. Bason, native of Haw River, graduated from the Baltimore College of Dental Surgery in 1846. For his time, he was well equipped. He located at Salisbury and practised there for years. Dr. J. F. Griffith purchased his property some years ago and still owns it.

Ransom P. Bessent, of Davie County, began the practise of dentistry in North Carolina in 1845 or 1846, and traveled over several counties, mostly on horseback, with a supply of instruments in a pair of leather saddlebags. He practised for years in western North Carolina and upper South Carolina, making his headquarters at Concord.

Dr. Thomas B. Carr came to North Carolina from New York State and located in Wilmington, where he did a great deal of skilled work and enjoyed a lucrative practise for more than thirty years, and in return for his services he became the possessor of a large amount of property.

Dr. E. B. Andrews practised in Charlotte during the 50's; was a most capable dentist, a man of spotless character, and enjoyed the esteem of all who knew him. He was an honor graduate of the Baltimore College of Dental Surgery in 1851 and died during the Civil War.

Dr. J. W. Hunter, of Forsyth County, was graduated from the Pennsylvania College of Dental Surgery in 1858 and was for that time considered one of the foremost operators in the State, practising at Salem, N. C. Although he lived in what was then an obscure town, twenty miles from a railroad, to him belongs the honor and distinction of having established for the first time the fact that, in law, dentistry is a specialty of medicine—that a dentist is a physician. During the Civil War he was subjected to the requirements of the conscript laws of North Carolina, and an enrolling officer ordered him into the service of the army. He claimed exemption (the law exempting physicians), and when the case came to trial it was decided in his favor by the Supreme Court of the United States; Chief Justice Richmond M. Pearson, who is believed to have been the ablest jurist that ever lived in North Carolina, rendering the opinion. He was for years a member of the State Board of Dental Examiners and filled other offices in the State Society.

Dr. D. W. C. Benbow, of Guilford County, graduated in dentistry at Baltimore in 1855. He located at Fayetteville and practised till 1861, when he removed to Greensboro to engage in other pursuits. He died September 3, 1902.

Dr. W. H. Hoffman was graduated from the Baltimore College of Dental Surgery in 1861 and returned to North Carolina to enter the Southern army and became a member of the staff of Gen. A. M. Scales. He carried his kit of dental instruments with him through the war and practised when opportunity afforded, and upon the cessation of hostilities immediately came to Charlotte and did a lucrative practise as long as he remained in the city. He was one of the organizers of this Society; was for years an active member and was held in high esteem by all who knew him. He has lived in Gastonia for a number of years, where he enjoys good health and is surrounded with a sufficiency of this world's goods.

Dr. B. F. Arrington, of Nash County, graduated in medicine and practised four years before entering a dental college in Baltimore, from which he was graduated in 1853, and located in Goldsboro. Being a man of education, polish and unusual ability, he was very early regarded as the leading dentist of his section of the State. As an inventor and contributor to dental literature he has exceeded in prominence the attainment of any of his confreres in North Carolina. He is still in the active practise of his profession, though narrowing it down to a specialty, that specialty being PYORRHOEA ALVEOLARIS, in the treatment and cure of which he is most successful.

Dr. V. E. Turner graduated from the Baltimore College of Dental Surgery in the class of 1858; practised till 1861, when he entered the Confederate service. After the war he returned to Henderson, where he remained till 1871, at which time he removed to Raleigh, where he has since enjoyed a large practise. He was one of the organizers of the North Carolina Dental Society and has held almost every position in the gift of the Society. He is now chairman of the Board of Dental Examiners, having been a member of that board since its formation, in 1879.

There were other worthy men among the number who practised dentistry in North Carolina from 1830 to 1865, and men who were more or less prominent in the profession, but I have been unable to procure sufficient information and precise data concerning them to justify an account here.

The first dental society was organized in the city of Charlotte in 1858. Those who were present and participated in its organization were Drs. E. B. Andrews, of Charlotte; J. W. Hunter, of Salem; D. W. C. Benbow, of Fayetteville, and a few others whose names cannot be learned. This society was short-lived. The meetings were held annually and were well attended until the breaking-out of the war in 1861. During the war the practising dentists were called together at Greensboro and a second society was organized in Dr. J. W. Howlett's

office. Dr. B. F. Arrington, of Goldsboro, and Dr. Banner (uncle of Dr. C. W. Banner, some time secretary and president, and now an honorary member of this society) was made secretary. That society was likewise of brief existence. A further effort was made to meet in Raleigh and organize, but that effort was deemed a failure. Soon after the close of the war—I believe it was August 11, 1875—another call was made for a gathering of the dentists at Beaufort, N. C., where was organized the present dental society. Dr. B. F. Arrington, of Goldsboro, was elected president, and Dr. W. H. Hoffman, of Charlotte, secretary. Each year since its organization at Beaufort in 1875 this society has met to transact business and carry out a prearranged program. On two occasions, viz., at Morehead City and at Asheville, the meetings were held conjointly with the National Dental Association, our society holding only brief business sessions and adjourning out of courtesy to the greater organization (our guests) and with a view of giving our members opportunity of attending the sessions of the "National."

From a small beginning, thirty-two years ago, this society has gradually increased, so that to-day, in number and *personnel*, it will compare favorably with that of any other State society, and there is cause for us to feel some little pride in its present status.

There were a great many things to look after in hedging ourselves about as a profession. Dental laws had to be enacted to protect the public from the practise of incompetents, as well as to guard our portals as a profession. In those unsettled times of reconstruction days it was quite difficult to secure any sort of legislation that did not have in it some form of graft. They didn't call it by that high-sounding name in those days.

I believe it was in 1879 that a law was passed creating an examining board. Since that day, by the clever and careful work of a few of our more influential members, one law after another has been passed, so that to-day our statute books have recorded upon their pages about as good and effective dental laws as those of which any State in the Union can boast.

Almost from its organization this Society has had a rigid code of ethics, to which its membership have strictly adhered. More than once this Society has been put to the painful duty of enforcing conformance to this code, the result of which has cost several excellent practitioners their membership in the Society. This Society has maintained a high standard of ethical practising for years, frowning upon and inveighing against those methods of appealing to public notice which smack of cheap notoriety. The putting into practise of the sentiment embodied in the Golden Rule has been encouraged by this Society, and any act that would rob a brother of any courtesy due him is held as an infraction of the code of ethics. It has been a decided policy of this Society to foster laudable ambition and to give encouragement to young men, especially those who are seeking to rise

to their full sphere of usefulness. At the same time it has insisted that one must first become thoroughly competent to perform the duties incumbent upon him before he can rise to the high position he would fill.

Men of intellect and culture are found upon our roll of members, and it is due to this fact that we find no difficulty in obtaining recognition at the hands of the other professions. We are honored at almost every meeting with the presence of a number of visitors, representative men who are high up in the councils of the profession in their respective States and places of abode. They have frequently been heard to remark on the high standard of the papers offered at our meetings; the splendid discussions, freely entered into by the membership, and the high order of clinics—always a special feature of our meetings—which are performed without sending to other States for clinicians. We, however, frequently furnish clinicians to other societies. We have generously allowed our Alexander, the pioneer in cast-filling work, to go to other States and other societies to show them how easily it is done if you only know how. They feel no greater honor in having him to clinic for them than we feel proud in the fact that he is ours.

We also feel a commendable pride in the fact that our Society and our profession in this State have furnished other States and other professions a number of men who have risen to positions of prominence and influence in the fields to which they have gone. Among them is

Dr. C. A. Rominger,

a native of Forsyth County, in the local schools of which county he received his preliminary education, afterwards attending Wake Forest College, and from that institution receiving the degree of B. A. For several years he did successful work as teacher in academic schools. In 1882 he graduated in dentistry from the dental department of Vanderbilt University; for two years he practised in Hillsboro, and in 1885 he removed to Reidsville, where he enjoyed a remunerative practice for about twenty years. He seldom, if ever, failed to attend the meetings of this Society. His contributions and clinics were of a high order of excellence. He never failed to respond when called upon for work in the Society; was secretary and then president of the Society, and filled these respective offices with ability of an unusual order. In 1904 he removed to Zion City, Illinois, where he enjoys the confidence and esteem of a large and growing clientele. As many of us remember, he was one of the pioneers in porcelain inlay work of the State, and his contributions to this subject were highly scientific and elicited high commendation from those competent of judging. He is a man of splendid integrity, possessing those sterling qualities of character that always secure to one the high esteem and sincere regard of those

in whose community he lives. Always ready to help the young man with laudable ambition, and sure to discourage unprofessional conduct, he did a great deal for the elevation of the profession in the State.

Dr. John H. London

was not long enough with us for many of his sterling qualities to discover themselves to us. He was born in the historic town of Pittsboro in March, 1869. While yet in his teens he entered the Baltimore College of Dental Surgery, from which institution he was graduated in March, 1890. He began practice in Raleigh in May of the same year. He removed to Chapel Hill in 1893, where he did a good practice for three years. In 1894 he was elected second vice-president of this Society. In the spring of 1896 he removed to Washington City; joined the District of Columbia Dental Society in 1897 (the constitution requiring one year's residence before applying for membership). In 1900 he was elected secretary of that Society, in 1901 vice-president and in 1902 he was elevated to the presidency. He was appointed member of the District of Columbia Board of Dental Examiners and reappointed the following year. In 1903 he was made president of the Examining Board, which position of honor and responsibility he still holds. In 1902, at which time the office was created, he was appointed, without application, attending dental surgeon to the United States Soldiers' Home, which position, requiring three mornings a week and paying a good salary, he still fills with entire satisfaction to all concerned. Dr. London is a member of the National Dental Association and an honorary member of this Society.

Charles R. Turner, A. B., M. D., D. D. S.,

was born November 3, 1875—a few months after the North Carolina Dental Society was organized. He entered the University of North Carolina at the age of fifteen and was graduated at the age of nineteen with distinction; graduated with honor in dental surgery at the University of Pennsylvania at the age of twenty-two; was examined for license by the Pennsylvania Board of Dental Examiners and made the highest record that was ever made before that board; graduated in medicine at the University College of Medicine in 1899; was elected professor of prosthetic dentistry in the dental department of the University College of Medicine in 1900; entered into active practice in the city of Richmond, Va. He was elected professor of prosthetic dentistry in the University of Pennsylvania, June, 1902. Early in the present year he was appointed dental surgeon to the Blockler Hospital for Crippled Children in the city of Philadelphia. This magnificent hospital has recently been built, at a cost of over a million dollars, and is amply endowed. He has written a text-book (now in press) upon prosthetic dentistry. He was appointed chairman of the section

of prosthetic dentistry in the Fourth International Dental Congress, held in St. Louis in 1904.

Dr. Turner, who is an honorary member of this Society, is the worthy son of our esteemed and cultured fellow-member, Dr. V. E. Turner, who holds such a unique and honored place in the history, growth and present status of the dental profession in North Carolina.

Dr. Joel D. Whitaker

took his literary training at A. & M. College at Raleigh and at the University of North Carolina, afterwards entering the University of Maryland, from which institution he took the degrees of D. D. S. and M. D. He located in Raleigh for the practise of dentistry and enjoyed a liberal and growing patronage until 1905, when he decided to give up the practise of dentistry and enter upon special work in the practise of medicine. He is now in Baltimore, acting resident physician in the Presbyterian Eye and Ear Hospital. It is his intention to return to his native State and specialize in the eye, ear, nose and throat.

Dr. Charles W. Banner

was born in Surry County, April 29, 1867; received his early training in the local schools, and at the age of twenty-two was graduated from the Philadelphia Dental College, in the class of 1889. He located in his home town, Mt. Airy, for the practise of his profession. He joined the State Society, and in 1895 was elected secretary, which position he filled most acceptably for three successive years. At the meeting in Fayetteville in 1897 he was elevated to the office of president and presided at the meeting in Raleigh the following May. Deciding to enter the medical profession, he gave up his large practise in Mt. Airy and entered the University of Maryland, taking the M. D. degree from that institution in 1899. Subsequently he spent one year in the Philadelphia Polyclinic and in Wills' Eye Hospital. Locating in Greensboro, he began the practise of the specialty of eye, ear, nose and throat. During the summer of 1905 he spent three months in Europe, attending clinics in London, Paris, Vienna and Berlin. Dr. Banner has grown in the confidence of the people of the Gate City and is enjoying a large practice. The same skill and ability that were part and parcel of his equipment as a dentist and measured him as peer of any of his associates in the dental profession, are his to an increased degree, in view of the larger opportunities for their employment. We are proud to claim him as an honorary member of our body.

Dr. Watt McGirt,

a sturdy "Scotch laddie," born just across the line in South Carolina, and losing his parents by death when only a little boy, came to live with an uncle in Robeson County in this State. He had few early

educational advantages, attending the common and private schools in his neighborhood. When he was nearly grown it so happened that in helping his uncle do some carpentry work he had the misfortune to inflict a wound upon his leg, near the knee, which rendered him a hopeless cripple. At once he decided to study dentistry and entered the Baltimore College of Dental Surgery, from which institution he was graduated in 1880. He returned to Robeson County and practised until 1887, when he removed to Darlington, S. C., where he enjoyed an especially large practise till his death, which occurred in 1891.

Dr. McGirt was never a member of this Society and I never knew him personally, but I feel a pride in the fact that he was a member of the profession in our State. I came in contact with some as fine specimens of work from his hands as I have ever seen. Gold fillings that he inserted in teeth during the 80's looked fifteen years after as though they had been inserted only the week before; and, judging from many things I observed about his work, much of which I came in contact with a few years ago, he was as conscientious and painstaking as any practitioner of dentistry in this State.

There are many suggestions that might be made, looking to the interests and effectiveness of this Society. In view of the existence of some pressing needs that are apparent to all, I make only a few recommendations, which I trust will be carried out by the Society.

The Supervisor of Clinics for the Society and the Examining Board have been greatly inconvenienced and, I might say, hurtfully affected in their work, by not having at their disposal a sufficient number of operating chairs for the use of clinicians at the Society meetings and students operating before the Examining Board. To remedy this condition, I would recommend that the Society purchase six folding chairs, at a cost of not exceeding fifteen dollars each, and place the same in the care of the secretary of the Examining Board, to be transported to the meeting-place of the Society each year, and in the interim stored in a safe and suitable place, the expense of transportation and storage to be borne by the Examining Board.

I recommend that the incoming president appoint a committee, consisting of a chairman and one man in each judicial district, to ascertain if every man practising in the State is properly registered and, under the existing law, entitled to so practise; at the same time making a record of when and where, if ever, each man graduated, and his present address.

I would also recommend that the secretary be allowed to purchase a steamer trunk, strong box or some suitable receptacle for the safe-keeping of the valuable papers and records of this Society.

I would urge each member to secure from the secretary a copy of the Constitution and By-Laws and familiarize himself with its contents. It contains, besides the Constitution and By-Laws, the code of ethics governing the dental profession, and the existing statutory enactments governing the practise of dentistry in the State.

In the preparation of this address, much of the data contained in that part of it referring to the early history of dentistry in North Carolina were taken from a paper written and read before this Society by Dr. J. F. Griffith, of Salisbury.

JUNE 20, 1906.

The President's address was referred to the following committee: Drs. D. E. Everitt, H. D. Harper, Sr., and F. S. Harris.

The Annual Essay was read by Dr. R. E. Ware, of Shelby:

THE GREATEST THING IN THE WORLD.

DR. R. E. WARE.

What a great and sublime thought was that conceived in the mind of God when he determined to create the world!

To measure and weigh the matter and force necessary to form the globe, to determine the elements required to do the work lying through the years before it, to assign to them their laws, specific gravities and affinities beforehand, together with all the combinations and collocations they were capable of making, required the mind and hand of an omnipotent and omniscient God. Had creation stopped here, what a barren and useless world this would have been! But it was not the purpose of the Creator to do this. All sea and land and air were filled with living, moving things, each in and adapted to its proper element. The earth must turn on its axis, dividing day and night, and revolve around the sun in regular order, that the seasons may come and go, and all proper conditions brought about to sustain life. That there was a great purpose present from the beginning, directing and controlling, there can be no doubt. "It presided over the first nebulous mist that floated out to take form in the foundations of the earth, but the meaning of creation was not understood till dust stood erect in a living man."

If it required a great thought to create a world, a much greater was necessary to create man. In all creation two essential things are present—mind and matter. That mind is superior to matter there is no doubt. Created in the image of God, receiving the breath of life, and thus made partaker of the divine nature, we see in man the final expression of the creative process, and he at once becomes the interpreter and interpretation of all that had gone before. Superior to all created beings, he was given power over all things on the earth, but not until "The ocean beds were dug out and the waters called off from a part of the earth's surface; the mighty peaks and the majestic turrets of the mountain chains were lifted into the sky; the poisonous

forces destructive of man's life locked up in soils and rocks; the meadows sown with grasses and the hospitable arms of the trees loaded with fruit, then upon the earth, adorned and ready for his coming, man appeared." Placed in the garden of Eden, he looked out upon this great, grand, beautiful, good world, created for him, and over which he was placed as ruler. Little knowledge had he of its vast and varied resources and possibilities. The air was filled with birds, the sea with fish; beasts and creeping things roamed over hill and plain. Before all this, Adam stood amazed and confused. The hum of factory and mill was not yet heard; no thunder of the locomotive sounded through the valleys; no steamboat crossed rivers and seas; neither had electricity been harnessed and subjected to the human will.

Six thousand years have elapsed since creation. Had our first parents remained in the Garden of Eden, perhaps the multiplied thousands of the discoveries and inventions of modern civilization would never have been known. Adam's knowledge, as yet, had all come by divine revelation, and not by necessity or experience. Had he remained in the garden, perhaps he might always have been a kind of an artificial, kindergarten man. But God did not so intend it. After viewing in awe-struck silence all the wonderful glories and beauties of the world, Adam lay down upon the verdant banks of one of the most beautiful lakes in the garden, filled with wonder, love and praise; but, weary and lonely, he fell into a deep sleep. When he awoke he beheld near his side the most beautiful being in the world—woman, the helpmeet and companion of man. But, alas! in an evil hour sin entered the world, and, with his brazen and impudent face, flattering and seductive tongue, approached the woman. Yielding to his tempting words, she disobeyed God, caused Adam to sin, and they were driven from the garden. Thorns and briars sprang up out of the ground, and Adam was told, "By the sweat of thy face shalt thou eat bread all the days of thy life." Though God was displeased with him, yet he commanded him to go forth and subdue the world, increase and multiply and replenish the earth. But all this history, together with the long, varied, severe but systematic training that followed is familiar and interesting to us all. Out of the family grew the tribes; from the tribes, the nation; from the nation, the kingdoms, empires and republics.

"By lifting one corner of the veil that hides from us the primitive conditions of mankind, we find that human relationship or society had its origin in the human family. In the care of childhood, where several children were successively born to the same parents, the ties of kinship became firmly knit, sympathies developed and selfishness was dethroned." With primitive man, food was the prime necessity of life, and as long as it was obtainable only by hunting, fishing, or otherwise seizing upon edible objects, fighting, quarreling and everlasting slaughters were inevitable, and always resulted in the survival

of the fiercest fighters to perpetuate their kind. It was soon noticed that the most coherent families prevailed over their less coherent rivals. The strong ties of family life supplied the motives of peaceful co-operation, which has gradually progressed through the centuries and become more noticeable during the last few decades. As civilization advanced and population increased, man became more powerful and intelligent. It was discovered that food could be obtained otherwise than by hunting and fishing. Agriculture became an active industry. Commercial relations were established, and this permitted a vastly greater population to live on a given area, thus favoring in many ways social organization. The great influence of organized social force is unlimited. "Commerce insures the union and establishes the relations that make this force possible. It brings men together in the exchange of food, clothing and other necessaries of life, thus enabling them to find their intellects and what they know, their hearts and what they can love, their wills and what they can do."

The satisfaction of hunger, the accumulation of wealth, and the establishment of social relations were not the only good accomplished, but the greatest benefit was the development of man. In some notable instances this development was neglected. For example, look at Babylon. In splendor and wealth she was without a rival among ancient nations. Situated in the most fertile portion of the globe, her capital eclipsed all others in magnificence. Her hanging gardens were the wonder of the world, but she put no estimate upon her men, except in the amount of labor performed. Luxury, sensuality, drunkenness, utter stupidity and depravity marked the ruin and overthrow of her proud empire, and she had not a man mentally endowed to write her history. What a contrast in the two centuries between 500 and 300 B. C. was that of Greece, who deposited her life in her great men! Her temples have fallen, her Parthenon is in ruins, and her art treasuries are no more, but her history and philosophy are immortal, because she emphasized men more than the things they created. But when Greece counted life cheaper than art, she no longer had men to create new art and none to protect the old. "By removing the emphasis from men to things, she descended from the Crœsus to the pauper of civilization." Israel had her Moses, greater than the tabernacle; David, greater than his harp; Isaiah, greater than his song; but when she emphasized the forms of worship more than the spiritual, her devotion died and her manhood was destroyed. The same might be said of Rome and other ancient nations. When Rome valued her men more than the laws they formulated, she sat upon her seven hills, the crowned mistress of the world; but when she stressed her laws to the obliteration of her men, she weakened and fell.

Leaving ancient scenes for a while, let us consider some of modern times. From the time the first auroral beams of the sun kisses the golden sands of our eastern shores till the shining rays are lost behind

the western slopes, he looks down upon the greatest country and the greatest people in the world. The United States is the home of science, discoveries and inventions; the birthplace of orators, warriors and statesmen; but in the fierce competition existing and growing in the commercial world to-day we see the attempt to re-enact in business life "the survival of the fittest in the struggle for existence." This spirit belongs to the dark ages, to beasts of the jungle, and should be forever relegated to its place. In the many manufacturing establishments we see men who are estimated more for what they can make than for the spirit or social nature that is within them. Boys and girls who ought to be in school are denied the privilege, because they are worth forty cents a day in a factory. We are using too many of our people as a commodity. There are a great many mowers, reapers, engines, cotton gins, hats, shoes, pins, buttons, countless numbers of fabrics, tools and machines of different kinds turned out from our mills and factories every day. If, in the making of these things, every person employed does not make a man out of himself, the whole thing is a disastrous failure. Our beautiful Southland is fast becoming a manufacturing center. Let us see to it that our manhood is not lost in the products of machinery. In this strenuous age, in our hurry to get rich quick, we too often allow our boys and girls to rush into business and neglect the culture of their minds. This should not be so, for we find in man a threefold nature—body, mind, and spirit. These must be harmoniously developed if he is to be the interpreter and interpretation of the physical universe. "Never was the thought of man absent from her movements through Pliocene, Miocene, Eocene, Cretaceous, Jurassic, Triassic, Carboniferous, Devonian, Silurian or Cambrian ages." When the morning stars sang together, the thought of this grand masterpiece of creation gave melody to their song.

But what is it that makes man "the greatest thing in the world"? Is it the wonderful mechanism of his body, over which physiologists and anatomists have stood confused? No. It is that immortal, divine, God-given nature imparted to him by the Creator in the beginning. By willing, directing and controlling the hands of men, the mind has been enabled to construct the grand fabric of modern civilization. How pleasing and instructive to contemplate the miraculous possibilities of the human mind! Created to interpret nature, it reads her history in the rocks, coal beds, sands, shells and fossils of the primal ages. It discovers the laws of chemistry written in the shape, sizes, affinities and specific gravities of the atoms that enter into the composition of all natural bodies. By observing the movements of the heavenly bodies, the mind sees books on astronomy written in their orbits. "The first books on zoology were written in the structure and habits of the lower animals." The books that fill all libraries, says one, are but transcripts from the original volumes written in rocks, seas, flowers, and skies; and, as Dr. Martineau has well said, "Man is the only being who can read and transcribe these wonderful volumes."

To the ignorant and uneducated mind they remain sealed and hidden forever. To the cattle and beast of the fields, grass and herbs mean nothing but food; to man, however, every blade and every leaf has a message, poetic and beautiful. "To him, who in the love of nature holds communion with her visible forms, she speaks a various language." He hears the song of the muse in the babbling brook, catches the secret of the seasons in the whisper of the winds, and attends the warnings of God in the thunderstorm.

By research and experience we find that the mind has two eyes—an eye of sense and an eye of reason. The one looks out upon a world of matter and fact; the other beholds a world of idea and relation. Through the eye of sense the flash of the lightning is seen in the cloud; through the eye of reason it is harnessed and subjected to the human will. The eye of sense observes the steam lift the lid of the kettle; the eye of reason sees the locomotives and steamships with bands of steam and steel linking the continents together, laying the products of every nation at our door and placing every race on the globe face to face. The eye of sense may observe the rough marble slab a thousand times, but the eye of reason looks beneath the surface and beholds the face of an angel. Through the eye of reason ideas of beauty are turned into painting, and Raphael's "Transfiguration" blesses the world. "Ideas of harmony are turned into song, and Handel's 'Messiah' agitates the thoughts and feelings of men with the melody of the skies. Ideas or form are turned into sculpture, and Michael Angelo's 'Moses' augments the world's fund of conviction and courage." By the proper manipulation and adjustment of mine, forest and canebrake, Beethoven, Handel and Mozart, by their genius, were enabled to bring out the matchless melodies and sacred symphonies God had put into them in the beginning. Notes of some song are in every created thing. They only need the hands of a master to find and play upon their mystic keys. The mind itself is a many-stringed instrument, and, when played on by the hand of divinity, can charm the universe into submission.

Astronomers tell us that the earth is very small in comparison to countless other inhabited worlds. This may be true, or not, but we do know that this is the greatest world of which we have any certain knowledge, that man is the greatest being in the world, and that our Creator is a great God.

Seeing, then, that man is the greatest being in the greatest world, endowed with mind and spirit, intellect and reason, whose capabilities are without limit, whose possibilities are boundless; susceptible of the highest culture, of the purest motives, of the noblest thoughts and loftiest aspirations; and that he may also become debauched and dethroned even of reason, and dragged to the lowest depths of degradation and ruin by yielding to the alluring temptations of Satan, and believing by the revelation of the Bible that the spirit is immortal, the harmonious development of the body, mind and spirit is readily

admitted to be of supreme importance. Neglect this, and man is not complete. The divine image will not be perfectly reflected in him. Let it be despised, and a great chasm is left unspanned in this life, and a still greater one in the life to come. Shall we not, therefore, educate in unison the body, mind, and spirit, purify and refine them together? Then we shall feel assured that when we approach our final sleep, "The stars shall fade away, the sun himself grow dim with age, and nature sink in years; but we shall flourish in immortal youth, unhurt amid the war of elements, the wreck of matter and the crash of worlds."

The address was referred to a committee composed of Drs. E. J. Tucker, J. M. Fleming and I. N. Carr.

Dr. J. M. Fleming introduced the following resolution, which was adopted:

Resolved, That it is to the best interest of the Society that those standing the examination for license to practise dentistry should be allowed, on presentation of their fee, to join the Society and sign the Constitution, with the distinct understanding that in the event that they should fail to pass the examination their fee should be returned and their membership thus severed.

Adopted, upon motion of J. S. Spurgeon.

The Society then adjourned.

Morning Session, June 21st.

Society was called to order at 9 A. M. by the President.

Dr. Everitt moved that the names of Drs. C. A. Rominger, A. H. Fleming and Joel D. Whitaker be changed from the active to the honorary roll of members, and that their dues for the preceding year be remitted. Motion was carried.

On Motion Dr. I. W. Jamieson and James Williams were reinstated on payment of their dues.

The following paper was read by Dr. J. H. Brooks, of Burlington:

HAS THE STUDY OF CHEMISTRY DUE CONSIDERATION BY THE DENTAL PROFESSION?

Dr. John H. Brooks, Burlington, N. C.

Not knowing well how to get out of the task assigned me, of writing a paper upon this subject, and feeling my total inability to make and have here to report a series of experiments and tests which might

prove profitable for discussion, and in view of the fact that dental journals are just now more than ever before filled with bright and energetic points dealing with and amply taking care of every branch of dental art, perhaps to the neglect of issues arising out of research and investigation, I shall ask to take the time inquiring of ourselves if the study of chemistry is receiving due consideration by the dentist.

Most of us have learned enough of chemistry to realize that if we shall attempt to take care of the scientific side of our profession, what we would call a working knowledge of chemistry is very essential. Without it we are very poorly prepared to accept or reject anybody's theory of dental caries. Without it we can take no part in the attempt to solve the uric-acid problem, neither in recognizing the effects of its disastrous work in our field of labor, nor in counteracting its poisoning effects. Without some such knowledge we are often, in the matter of diagnosis and more often in our prophylaxis and therapeutics, very much as a mariner at sea without a compass.

We must search the list of remedial agents to apply something such as others have applied to such cases as we suppose we have in hand, all in a way of obeying the commandments of men. It is a fact that much of our most valuable knowledge comes through the experience of others, as well as through our own clinical experience.

But where shall our claims upon scientific dentistry come in? Do we not need something better than a brother's advice, something more than a second-hand knowledge of the clay at our command? The entire business of our country is audited by arranging and rearranging the ten numerals; they are thrown in lines and their sums total, divisions and subdivisions had, until each man is supposed to have his due portion of the material things of earth. Shall we not strive to gain such a knowledge of the seventy-six elements and their compounds as may enable us to line up these elements in such a way that they may be made to fill many of the empty measures now around us?

Since in a way we are standing out as auditors to assist nature in paying the penalties of transgressions; since we know that these elements behave all according to their arrangement or disarrangement, their associations or combinations; that the elements contained in the substances which go to make up the most potent factors in sustaining physical life, when disarranged or thrown in confusion by the slightest contamination of certain other elements, prove detrimental or disastrous to such life.

May we illustrate by a word in regard to the elements in two substances with which we are all familiar—H_2O, and H_2SO_4—water and sulphuric acid.

When the atoms of hydrogen and oxygen, which were combined to form water, when brought in contact with the atom of sulphur to form H_2SO_4, are not all their virtues turned into vices and have not oxygen and hydrogen become parties to all the crimes which sulphuric acid is capable of committing against physical life?

If in our science—dental science—we shall attempt to prove all things—not all things, but many things, such as have lifted and must continue to lift dentistry from that of a mechanical trade to a scientific profession—where else shall we go except to the alphabet of the universe?

If we shall ever know analytical chemistry as we know A, B, C, and physiological chemistry as well, who can doubt that many of the mysteries now hanging around immunities and susceptibilities to dental caries shall be cleared up, and perhaps the field of dental and general pathology as well, made to look much less dark to us?

Possibly the work of the antitoxines and the function of the lucocyte shall all be explained in the law of cause and effect.

If the diversity of foodstuff now indulged in by the human family is in any way responsible for the dental degeneracies that so greatly afflict modern civilization, shall we ever be able to prove it or correct it without first obtaining all the knowledge possible concerning those chemical changes constantly going on in that human laboratory, the alimentary canal? And that malnutrition is already a vital question in dental science no man can deny.

One other reason we should not forget our chemistry, much of the current dental literature leading up to or up from scientific investigation is all Greek to us if we are not familiar with chemical terms and know something of chemical reactions.

It is either a fact that dentists know but little of chemistry, or that dental faculties think such is the case, as only a very small per cent of our dental colleges allow dentists to teach chemistry to their dental students. Perhaps this helps to account for a lack of interest in the subject. We are not started in the laboratory to make experiments and investigations, such as may best fit our every-day contact.

One other reason why many of us fail to develop into investigators is found in that "when we have passed the bars," the college and the board, we feel to be equally lightweights, financially as mentally; haven't the price just then to invest in any chemical apparatus; plenty of time to find several new elements, but short of funds, until by the time finances have improved we have become more interested in other things—investments, perhaps, such as investing in plates, crowns and bridges.

And if by this time our conscience is still commanding us to investigate by analyzing substances of interest to us, we are willing to half-way obey—not half-way willing, but wholly willing to only half-way obey.

By taking the first half of the word "investigate" as a substance to work upon, we have begun our analysis by breaking the whole word "investigate" into halves; and as each half still seems to be a compound, and we seem to have great affinity for the first half, "invest," we begin first to work on it, hoping at the same time that some other fellow may take the other half before we get back to it. After we have

applied to this first half all of the re-agents at our command, it remains a knotty compound.

Perhaps frequent explosions have been threatened along the line. We may now become convinced that synthetical methods would have suited us and our substance much better if we would gain such end products as we are looking for.

At this point we decide, possibly, our visions have become impaired by the fumes arising out of our experiments, and that we will let the other fellow do the rest. But, to be honest with ourselves, are such the men who have done most for modern dentistry? What of dentistry until the dental scientists appeared on the scene of action?

The paper was discussed by Dr. McDowell.

The following paper was read by Dr. J. S. Spurgeon:

OPERATIVE DENTISTRY.

Dr. J. S. Spurgeon.

In the year 1896, just ten years ago, when this association held its meeting in Morehead City, Dr. C. L. Alexander, of Charlotte, N. C., gave a clinic, showing the use of the cast gold or gold inlay as a filling, this being the first clinic in the history of the profession showing the application of this class of work in restoring the contour and preserving the natural teeth from the ravages of decay and abrasion.

In 1895, a year before this time, he demonstrated this work in a limited way before the Southern Dental Association, in Atlanta, Ga.

Later, during the year 1896, he read a paper before the Southern Dental Association, at Asheville, N. C., and exhibited cuts illustrating in detail the technique of the gold filling or gold inlay, as applied to different classes of cavities, and also as used by him for abutments for bridges; and, so far as my information goes, no one present had ever seen or heard of this kind of work, except those who were present at the meeting of the same association in Atlanta the year before, and those present at the meeting at Morehead City the same year, though for some years previous to this time he had been using it in his own practice.

In the *Dental Cosmos* for March, 1906, Dr. W. Storer Howe gives an historical review of the development of bridge work, beginning with a description of the B. J. Bing bridge, made in 1869. In this review, which seems to be an exhaustive research on the subject, there is nothing to indicate the use of the cast abutments for bridges until the year 1896, when Dr. Alexander showed his method of attaching the bridge with the cast cap or hood with dowel pins. These hoods were cemented to the second molar and first bicuspid with live nerves. And by referring to the report of that meeting in Asheville you will see that he gave in detail the technique of the cast filling as

well as the cast abutments; and, after considerable research in the history of the profession, I find no allusion to this class of work previous to this time. So that, the statements made here are not from memory or hearsay, but are matters of record, and their correctness can hardly be doubted. From time to time, Dr. Alexander has made many and valuable developments as to the application of this class of work, some of which have been published.

But, notwithstanding all this evidence, we sometimes see a man step in and claim these ideas as his own. For instance, we find in the *Dental Cosmos* for March, 1906, "A New Anterior Bridge Abutment," by Dr. R. L. Simpson. Now, in his description of this, there may be some little features of it that had not been deemed of sufficient importance to describe. But if you will refer to the *Dental Cosmos* for October, 1896, you will find the same principles and practically the same attachment described by Dr. Alexander.

So that, with the lights before us, we can hardly doubt but that the credit for the beautiful, artistic and satisfactory results obtained by the use of the cast gold filling or gold inlay and cast abutment for bridges is due to the inventive genius and persistent perseverance of Dr. C. L. Alexander.

And now let us record our profound appreciation of his labors; for, in his modest way, both in his own practise and before the many different Society meetings that he has attended, he has labored to give to the profession the practical benefits of his experience and developments in this class of work. This may seem a little out of place, owing to his presence to-day and his innate modesty. But why wait fifty or a hundred years to recognize a man's ability and give him his dues? It is interesting to note how little encouragement he received at the hands of the profession for many years; in fact, it is only within the last two years that much attention has been given to this class of work, but to-day we see the result of his labors has completely changed the literature on operative dentistry, and almost as completely changed the manner of restoring and preventing decay in broken and carious teeth. Ten years ago the beautiful and artistic results obtained by the use of the porcelain and gold inlays of to-day was an evanescent dream, if it was even as much as a dream.

Porcelain as a filling material must claim our attention. It is beautiful; it is durable; it has a prestige of its own; it fills a large place in our every-day practise. We could not do without it; but its usefulness in restoring and preserving a large class of broken and abraded teeth is little and limited, as compared with the cast gold filling or gold inlay, for the cast gold or gold inlay has no limitation, except from an æsthetic point of view, in the anterior teeth, where the display of gold is a serious objection. And in many of these cases, especially for men, it is better to use the gold and have the teeth both beautifully and permanently restored than to use some other material that is less durable. I said that it has no limitation in its application, and that

is true, for its greatest field of usefulness is in those teeth that present the most hopeless appearance. In badly decayed and broken molars and bicuspids, in proximal cavities, where they have been filled from time to time, where recurrent decay has gone below the gum margin, the contour has been lost, the buccal and lingual walls are broken away. In this class of cavities you will find the ideal place for the most beautiful and permanent cast gold filling. However, it is not my purpose to go into a detailed description of the cavities demanding this class of work, or into the technique of the work. For that I will refer you to the articles already published and illustrated by Dr. Alexander, which I believe to be the most practical and useful of any extant; also to a series of articles now being published in the "Items of Interest," by Dr. Hinman, of Atlanta, Ga. His description of the class of cavities and his manner of procedure, so far as he has gone, is splendid. Also, to an article in "Items of Interest" for April, by Dr. Joseph W. Wassall, of Chicago. It is a valuable description of the work.

But let me offer a word of encouragement and a word of caution to those who are not now doing this class of work. I would encourage you to begin. Practise on models until you have learned the principles involved, because, if you begin in the mouth, a few failures might discourage you so that you would conclude there was nothing in it. Besides, the impression made on the patient would be bad. Experiments of that kind are expensive. Do the same class of filling on the model before you try it in the mouth, because what might seem the easiest sometimes proves to be the most difficult, and this knowledge should be gained by working on models and not on the mouth.

And now a word of caution. Let no man deceive himself by thinking that this is a quick, easy or cheap method of filling teeth, for it is not, and whoever practises it with that end in view will find that he has made a great mistake. To get satisfactory results, the work must be carefully and accurately done, and to do this it takes just about as much time as for the condensed gold filling, and in small cavities it takes more time; but I feel sure that the operator and patient will be amply repaid for the extra time consumed, by the durability of the filling. Time has demonstrated that this is the most durable filling known, when well done. The requirements are: a proper anchorage, an accurate fit at the margin, a good contour, and occlusion; and when you have accomplished this you need have no fear of the results.

In a few years a gold filling of any size, hammered in with pluggers, will be a thing of the past; and the younger men will never know of the trying, nerve-wearing experiences of the operator of to-day.

And now, as the subject assigned me covers so much territory, I want to say a few words about the rational cleansing of pulp chambers and root canals; and in doing this, first let me refer you to an article in the *Dental Cosmos* for May, 1906, by Dr. J. P. Buckley, of Chicago, entitled "The Rational Treatment of Putrescent Pulps, and

Their Sequelæ." This is the most plausible article I ever saw on the subject, and deserves our careful consideration. But, regardless of the chemical properties of putrescent pulp, there are several things in connection with the removal of it and the *debris* in the cavity that is attended with great difficulty and may produce serious results.

There is one thing with which we are all familiar, and that is, if you open a putrescent canal and attempt to cleanse and disinfect at the first sitting, you are very apt to have trouble; whereas, if when the cavity in the tooth is simply cleansed of its soft decay and we use a good antiseptic and germicide, placed in the cavity on cotton loosely and let it remain twenty-four hours, the chances are that the cavity and canals can be cleansed and the proper treatment carried out without much if any after pain or soreness. Now, the manner of cleansing these canals is the point to which I wish to direct your attention; and in the first place let me say that for cleansing those in a putrid condition, or, for that matter, those freshly devitalized, we have no use for the rubber dam. The conditions prevailing in the tooth are certainly worse than anything that could come out of the mouth and get into it, and with the dam in place the chances for getting the *debris* out of and away from the tooth are much less than with it off. So that, the most rational way to cleanse it is to leave the dam off, expose the cavity and flush with large quantities of sodium chloride solution—say, one tablespoonful to the half-pint of water, hot as can be borne in the mouth with comfort. Then, by using the broach and spoon excavators just a little and flush with the solution and repeat this time and again, you have soon removed all the decomposed matter. Then, with drills enlarge the canals and flush with the solution again and again, and you have the tooth in good condition for treatment, with little danger of having forced septic matter through the apical foramen. When it is thus cleansed, adjust the dam and proceed with the treatment. And the treatment should be a 40-per-cent solution of formaldehyde, being careful not to force any through the apical foramen. The formaldehyde will positively and absolutely destroy all the germs and bacteria that might be left in the canal. And if these things be done, and you succeed in properly filling the root canals, I can give you positive assurance that you will have no further trouble. There is no place in the treatment of putrid pulps and canals for peroxide of hydrogen, except when you have a fistulous opening, and I don't think much of it then. The theory of using it is beautiful, but the dangerous results attending it are serious.

And now let me close by giving an incident in practise: Some time ago a young man presented, complaining of severe pain in the regions of the upper left bicuspids and molars and a general neuralgic condition of the face on the left side, with a large and painful fever blister on the lower lip, near the left corner of the mouth. After a careful examination of the teeth, I was unable to locate the trouble. So, incidentally, and accidentally, I might say, I made an application

of campho-phenique to the fever blister, and immediately the toothache and neuralgia disappeared. A few more applications from time to time cured the fever blister and all symptoms of the toothache and neuralgia.

Will fever blisters cause toothache?

The paper was discussed by Drs. Watkins, I. N. Carr, and closed by Dr. Spurgeon.

The following resolution was introduced by Dr. Everitt:

Adopted, upon motion of Dr. D. E. Everitt.

Resolved, That the publication of the proceedings of this Society be discontinued for the present, and that the money used for that purpose be directed to prosecute violators of the State dental laws, whenever and wherever their existence is demonstrated beyond reasonable doubt.

RALEIGH LOCAL SOCIETY,
NORWOOD G. CARROLL, *Secretary.*

Resolution was adopted.

The committee appointed to receive and report on the President's address made the following report:

Your committee, to which was referred the president's address for report on same, beg leave to report:

That we consider the resume of early history of dentistry in North Carolina as interesting and proper to be brought out occasionally, "lest we forget," and we regret that the writer was under limitations for lack of reliable data.

D. E. EVERITT,
H. D. HARPER,
F. S. HARREL.

On motion of Dr. A. H. Fleming it was ordered that all papers brought before the Society and intended to form a part of the proceedings should be typewritten on presentation.

The following paper was read by Dr. R. T. Allen, of Lumberton:

OUR PROPHYLACTIC DUTY.

DR. R. T. ALLEN.

Bacon has said, "Every man owes a duty to his profession," and it has been well added, "to the community in which he lives." As citizens and dentists we owe duties to our Creator, our country, our fellow-men and ourselves; for, as John Ruskin said, "The constant duty of every man to his fellows is to ascertain his own powers and special gifts and to strengthen them for the help of others."

The members of the dental profession can be divided into two classes, viz., Professional and Commercial.

By professional dentists is meant those who regard the ethics of the profession, and who, in their dealings with their patients, as well as their fellow-practitioners, endeavor to apply the Golden Rule.

By commercial dentists is meant those who look on the practice of the profession as a trade and have no regard for the code of ethics.

As this Society is composed only of men of the first class, we will try to study together some of the duties which we as professional dentists owe our patients in the prevention of disease.

Lord Chesterfield remarked that "Fine and clean teeth are among the first recommendations to be met with in the common intercourse of society," and Lavater said, "White, clean and well-arranged teeth, visible as soon as the mouth opens, I have never met with except in good, acute, honest, candid and faithful men." He might have gone further and said, without fear of contradiction, that strong teeth are essential to the best type of manhood, and that degeneracy of the teeth means deterioration of the race.

Great intellectual power is often associated with weak teeth, and weak and rapidly disintegrating teeth are frequently seen in mouths of men of great stature; but that rare combination of vital power—physical and mental strength—which is found in the great leaders of men, is usually accompanied by strong teeth, as only great genius and unusual force can combat the impairment of health and strength which normally follows the loss of the teeth.

It is our duty to teach our patients the proper use of the teeth. The uses of the teeth are to masticate the food, to assist in the articulation of words, and to give expression to the countenance. We will consider only the first use.

Webster has told us "that anything we wish to see introduced into the life of the public should first be introduced into the public schools." "We must reach the parent through the child, the child through the teacher, and the teacher through the dental profession or some book on physiology."

"If the mouths of children in public schools could be examined by competent dentists, carious or diseased teeth filled or extracted, and instructions given and enforced with regard to the intelligent use of brushes and antiseptics, the death rate of this country would be very materially lessened, the percentage of illness much reduced, and a stronger and more vigorous race result."

"Without mastication there cannot be perfect digestion, without perfect digestion there cannot be perfect assimilation, and without perfect assimilation there cannot be health."

Some are advocating the theory that mastication of the food is not necessary for the stomach, but the person whose teeth can properly masticate food, and whose digestive secretions are called upon to perform their respective functions, is in a far more physiological condi-

tion than the consumer of concentrated and predigested nutrients. The effects of mastication are not limited to the changes produced by it in the food, but it exerts an influence upon the entire body.

Since mastication plays such an important part in the life of an individual, it deserves our most careful attention.

That it is possible to maintain on ordinary civilized diet a fine set of healthy teeth till past middle life, provided the food be habitually subjected to efficient mastication, is shown in this illustrative case of Dr. Campbell:

"It is that of a man in his fiftieth year. His teeth were sound—a very unusual occurrence among the London poor at his age. In seeking for an explanation, the fact was elicited that he was unable to swallow his food without chewing it very thoroughly, and on giving him a moderate-sized piece of bread, with the request that he should chew it in the ordinary way, it was found that he subjected it to one hundred and twenty separate bites before swallowing it, and in the steady, deliberate way he went to work, and in his extensive lateral movements of the maudible, he reminded him of a cow chewing its cud. The temporals and masseters are enormous, and the like is no doubt true of the pterygoids. He has well-developed nasal passages, has never suffered from nasal obstruction, while his buccal mucous membrane is unusually healthy.

"May we not attribute this healthy state of the mouth, teeth and nose to the good effects upon them of efficient chewing? Here was a man who lived for thirty long years in London, on the same kind of food as the average poor Londoner; but instead of finding his mouth full of carious, tartar-coated teeth and spongy, receding, pus-exuding gums, there were thirty-two sound teeth, firmly set in healthy gums and all but devoid of tartar."

It is our duty to put the teeth and gums of our patients in condition to be used, and recommend and urge that systematic attention be given them.

If the teeth are thoroughly cleaned, all particles of tartar removed, all exposed surfaces of the teeth polished, and the patient will conscientiously use the toothbrush daily, being careful to remove all particles of food, there is no reason why the mouth should not remain in a hygienic conditions and caries lessened, if not entirely prevented.

The thoroughness of the operation and the persistence of the patients in carrying out the instructions of the dentist are the essentials of success.

The beneficial results of systematic attention to the teeth and gums is shown in the case of the employees of the Diamond Match Company. A dentist is employed by the company to examine every three months the condition of the mouths and teeth of the two thousand employees. All needed operations are performed, whether filling, removal of tartar or keeping the gums in healthy condition. The employees are required to brush their teeth not less than once a day.

While the first object in this forced prophylactic treatment was to reduce the cases of phosphornecrosis, it is interesting to know the general results.

By this means phosphornecrosis has been almost entirely stamped out. Not only that. Fewer days are lost through sickness, and better health prevails. During epidemics of disease, fewer employees are affected by prevailing maladies.

It is our duty to be examples for our patients, and, instead of having tartar-covered teeth and pus-oozing gums, to be able to show strong, well-cleaned teeth and firm, healthy gums.

The patient will naturally ask how you keep your teeth so clean. Having gained an attentive listener, instruct him how he can keep his mouth in the same hygienic condition.

Next to keeping the mouth in healthy condition, we should have clean hands and instruments. The sterilizing of our instruments is one duty in the performance of which too many of us are derelict. We cannot afford to infect mouths because we will not give the proper attention to this important duty.

The profession at large, and especially the dentists of North Carolina, are due Dr. B. F. Arrington a debt of gratitude for his untiring efforts along the line of prophylactic treatment. If any member of this Society doubts that diseased gums can be cured, write him to come to your office, watch him operate, and be convinced.

In conclusion, I want to enter another plea for the children in the various orphanages of the State, and recommend that a committee be appointed by this Society, whose duty it shall be to endeavor to secure the services of several reputable dentists, who will make professional visits to all the orphanages in the State within the next twelve months, and report at our next meeting.

The paper was discussed by Drs. Harper, Bland, R. L. Carr, Geo. A. Carr, McDowell, James, Everitt, Harris, J. R. Osborne, Hunt, Gorman, Cole, Watkins, W. Smathers, Hartsell, Harris, Allen.

On motion a committee of three, J. M. Fleming, H. D. Harper, Sr., and R. E. Ware, was appointed to formulate some plan as to the prosecution of illegal practitioners, and later this committee reported the following resolution, which was adopted:

We recommend that a committee of one member, to be known as the Prosecuting Committee, be appointed, whose duty it shall be to direct prosecution in all cases which are properly brought before him.

The burden of the work must necessarily fall on the local dentist in whose community the violation takes place. Too often the local

man desires that the offender be prosecuted, provided his name be not mentioned in the matter. Each dentist should have a different idea of his duty to the Society. A false conception like that will bring failure from the start.

We think that it should be the duty of each and every dentist who knows of any violation of the dental laws to immediately seek out such evidence as he deems sufficient to convict, and let such evidence be made in form of affidavit before a magistrate. When this is done, the Prosecuting Committee will have something tangible and positive with which to proceed.

When violations are thus reported to the committee, it shall become his duty to employ counsel, without political aspirations, who, without fear or favor, will prosecute such violator to the full limit of the law.

We think the proper course to pursue would be to take it up before some fair-minded magistrate who will either convict or acquit. In cases of conviction, few cases will be appealed to the courts. In cases of acquittal our lawyer will be governed by the evidence as to appeal, and when we do appeal it shall be a fight to the finish—solicitor or no solicitor.

We feel that each prosecution will have weight added to it by the knowledge that the North Carolina Dental Society is behind it, and that a few convictions will end illegal practice in North Carolina for at least a generation. All expense, including expense of affidavits, to be borne out of the treasury of the Society.

Respectfully submitted,

J. M. Fleming,
H. D. Harper, Sr.,
R. E. Ware.

We recommend, too, that these resolutions, if adopted, be given to the press of the State.

Dr. Geo. A. Carr then read the following paper:

SOMNOFORME VERSUS NITROUS OXIDE.

Mr. Chairman, Ladies and Gentlemen:

In presenting my subject to you I do not think it necessary to take up your time with a long history of somnoforme, but will sum up its history in a few words. Somnoforme is the invention of Dr. G. Rolland, late house surgeon to the Paris hospitals, professor of anæsthetics and dean of the Dental School and Hospital of Bordeaux, France. Our profession is making such rapid advances that a great many ways and means and drugs and appliances are constantly being brought to our notice, and it is our bounden duty to inquire into them all and separate the chaff from the wheat and hold fast to that which

is good. Many of us are loth to take hold of a new thing and to drop an old one. In such cases we can only gain all the information we can about the new things and discover what advantages, if any, the new have over the old. Somnoforme is the newest of general anæsthetics, and, from my experience with the drug, it is going to hold a most important place in both dentistry and medicine. Those of us who have been called upon in the past to administer a general anæsthetic have used nitrous oxide, and it has been a great blessing to mankind, but I believe that somnoforme is and will be a much greater blessing.

Before going into the physiological action of somnoforme, let me state its chemical constituents. It is composed of ethyl chloride 60 per cent, methyl chloride 35 per cent and ethyl bromide 5 per cent. If there are any here who have not looked into the matter, they may hastily conclude as follows: Somnoforme is too largely composed of ethyl chloride, and ethyl chloride has proven to be too dangerous, as there have been a great many fatalities from its use as a general anæsthetic. As to ethyl chloride that is true, and it is fraught with too many dangers to warrant its use as an anæsthetic for dental operations. But we must analyze somnoforme more carefully than that, and just bear in mind that the qualities of a mixture may be entirely different from the individual qualities of its components as to the physiological action. Dr. Rolland has, in giving us somnoforme, blended drugs, already familiar to us, into a mixture, from which the respective advantages of each one could be obtained and corresponding effects produced without having many of the inconveniences and the same degree of danger of the individual drugs. The diffusibility of methyl chloride quickens the action of the anæsthetic, the ethyl chloride prolongs the anæsthesia, and the ethyl bromide causes an analgesic condition, lasting after the return to consciousness.

Dr. Rolland's theory of an ideal narcosis is as follows: An ideal anæsthesia could only be produced were it possible to find a gas that represented in the organism the same conditions of entry, of sojourn and of exit as oxygen. That it was necessary for the production of anæsthesia that the tension of the anæsthetic gas should be superior to that of oxygen, in order that it might take the place of the latter in a certain proportion in the alveoli. Also, that, according to the laws of physiology of respiration, tension produces two kinds of phenomena, which alternate and are opposed to one another, namely, absorption and elimination, and that the greater the tension of the gas in the alveoli the easier its absorption and elimination, and as the degree of volatility of a gas determines its pressure, the more volatile a gas the more easily it can be absorbed, and consequently the more easily it can be eliminated. The red corpuscles of the blood are charged with oxygen during inhalation, and distribute it to the tissues. So far as our present knowledge extends, the blood corpuscles have their period of activity during their red arterial stage. They then consume the

oxygen, and will afterwards be carried back, inactive, to the lungs, where, by contact with oxygen, they resume their activity. As about twenty-five or thirty seconds are necessary for a red corpuscle after leaving the heart to return to it, so by dividing the circulation into two parts, one arterial and the other veinous, the action of the oxygen should last from twelve to fifteen seconds. This is the way in which somnoforme acts. If the analgesic sleep persists for a considerable length of time after the normal circulatory period, the cause is that the anæsthetic element in producing sleep has caused an impression on the nervous element. I will not go further into this, as it would take up unnecessary time, for Dr. Rolland has written so ably on the subject and it is chiefly due to his writings that I have been able to point out these physiological facts. I have administered somnoforme in my practice about 150 times, and I had been administering nitrous oxide almost daily for four years, till I began the use of somnoforme. The first time I administered somnoforme it gave me such good results that I was persuaded thereby to use it again and again, and it has acted so nicely for me that my gas apparatus is in another room and out of commission. Now, my reasons for discarding nitrous oxide are, that I can obtain much better results in a much shorter time and with less trouble than with nitrous oxide, and, I firmly believe, with no more, if, indeed, not less, danger to the patient. It is very much more agreeable to the patient, as one does not experience any of that suffocating feeling so often complained of with gas; they are anæsthetized before they have time to struggle, as they frequently do while going under gas, and I can go about my extracting or other operation with ease, taking time to do the operating deliberately and well, which one certainly cannot do when pure nitrous oxide is administered. With nitrous oxide there is often very difficult breathing, oftentimes jactitation of the muscles, greatly annoying the operator, and again there is oftentimes extreme rigidity, which rarely occurs with somnoforme. Some writers have claimed there is less hemorrhage under somnoforme than under gas, but I have not been able to detect any difference between the two in that respect. When nitrous oxide is given, the complexion is more often than not extremely alarming in appearance; the face at times almost purple and the eyes protruding from their sockets. While these symptoms occurring under N_2O have proved to seldom terminate fatally, they certainly work against the operator in his work; and if we have an anæsthetic presenting none of these alarming symptoms and no more of the dangers than N_2O, it would certainly seem to our advantage to use it.

I believe that somnoforme is the ideal general anæsthetic for short operations. As to the physiological action of somnoforme, it acts much in the same manner as any other general anæsthetic. It, however, differs from chloroform, ether or N_2O, in that it stimulates the respiration and the heart slightly. The complexion is good throughout the administration, and the face is sometimes slightly

flushed, giving it a healthy appearance. Now, I beg of you not to think that because I have so much faith in somnoforme I think it is without any danger, for I realize and appreciate the fact that any agent that will bring about a state of unconsciousness has along with it an element of danger. At the same time we as dental surgeons are called upon to administer anæsthetics, and when the case in hand demands it, it is our duty to select the one having the qualities necessary to a successful anæsthesia and at the same time carrying with it the minimum amount of danger.

Anything that has a tendency to lessen or alleviate pain is of such importance to us that we should study closely anything in the field of anæsthesia, either general or local. Since cocaine was introduced, by far the larger number of dental surgeons have resorted to its use for minor surgical operations, preferring it to nitrous oxide. I do not consider cocaine a satisfactory agent in a great many cases, not only on account of any contra-indications as to the drug itself, but of the case in hand. That cocaine has proven to be an excellent anæsthetic in a great many instances I admit, and there can be no question as to that, for cocaine is eminently satisfactory when its use is indicated. I have observed that cocaine is of little value in cases of severe inflammation, such as abscess, bone felons, etc. Tissues that are inflamed and congested do not absorb cocaine easily, and when it is used in such cases the results are often ungratifying, even if we succeed in anæsthetizing the parts, as sloughing is prone to occur, and not infrequently gangrene. Cocaine is always contra-indicated with neurasthenics, and, because of the serious systemic effect often produced in persons predisposed to syncope, it is contra-indicated in such instances; and then we have observed that even very small doses have occasionally produced serious and sometimes fatal results in persons who were in strong and robust health, due to an idiosyncracy that it was impossible to diagnose. Yet there are times when cocaine is indicated and good results are obtained. Somnoforme has been administered by Dr. Rolland himself to 25,000 different patients with excellent results. These and other administrations give somnoforme a clean record of over 100,000 administrations. Deaths may have occurred from somnoforme since its use was begun in this country, but I have found no record of any deaths from its use. Deaths probably will be caused by it, and if not, then it will be the only anæsthetic that has not caused death. Somnoforme, like nitrous oxide or any other general anæsthetic, is a dangerous thing in the hands of a careless operator, for the safety in the administration of any anæsthetic lies as much in the ability of the administrator as in the selection of the anæsthetic. Every operator, when he administers a general anæsthetic, should bear in mind that he is holding his patient on a narrow ledge between life and death, and should be ever watchful that he does not overstep the mark. The anæsthetist should in every instance take the precaution of having at hand a hypodermic

of strychnine or nitroglycerine. It is not at all likely that any restorative will be needed when either nitrous oxide or somnoforme are administered properly, but the unexpected sometimes happens, and one should be ready to meet emergencies.

I might mention here that there is a case on record in the *British Medical Journal* where respiration entirely ceased in a patient under chloroform, and, after artificial respiration had been used with no benefit, some amyl nitrite was poured on lint, held to the patient's nostrils, and in ten seconds voluntary respiration started and the patient recovered. I believe amyl nitrite is a valuable agent and a splendid thing to have on hand. It is a powerful heart stimulant and seems to stimulate respiration. I always have one of the pearls close at hand, though I have never had occasion to resort to their use. Now, I have spoken of the dangers of somnoforme because I feel that I could not do my subject justice without doing so, but, while there is an element of danger in its use, I believe it to be very remote, if the somnoforme is administered carefully and with the proper inhaler. The chief danger in its use is its effect upon the respiration. Respiration is slightly stimulated, which is on the side of safety, but in cases of animals anæsthetized with it for the purpose of producing death the heart was found to beat several minutes after respiration ceased. This also would seem to classify it as an unusually safe anæsthetic, for as long as the heart beats there is always hope and a chance to bring about respiration by artificial means. I believe that the chief contra-indication for somnoforme is the ordinary bad cold or any obstruction to the breathing apparatus, whether it be an enlarged tonsil or a tight corset. It is always incumbent that the corset be removed, but with the enlarged tonsils the case is different.

Ordinary derangements of the heart, such as intermittent pulse, do not seem to contra-indicate its use, and fatalities do not seem to occur in simple affections of the heart when somnoforme is given. I would prefer my patient having a normal heart, though I have frequently given it to people with weak hearts and intermittent pulse with splendid results. Chronic emphysema is always a serious contra-indication. There are, indeed, very few contra-indications to the administration of somnoforme, and to my mind it is the ideal anæsthetic for minor operations. It should always be given with an inhaler that is made for the purpose, to get the best results. The inhaler is constructed so that the patient may breathe nothing but somnoforme vapor. There are times when this closed method of administration causes the patient to show signs of suffocation, and at such a time by simply opening the valve one breath of air will usually remedy this, and when three or four more inspirations are taken a condition of relaxation and shortly afterwards profound anæsthesia comes on. In regard to knowing when the patient is sufficiently anæsthetized to stop the anæsthetic, it depends upon the length of the operation to be performed. When only one or two teeth are to be extracted, the inhaler

should be removed as soon as the patient loses the power to hold up his arm. When the inhaler is removed at that time, the reflex action of the conjunctiva will probably be present, but that does not matter, as the patient will be found sufficiently anæsthetized for a short operation and be unconscious of it. When a longer anæsthesia is wanted, keep the inhaler on for about four inspirations after the power of control in the arms is lost, when conjunctival reflex action will usually be lost, but not always, so that point will not do to depend upon. In every case the anæsthetist must use his own judgment, for each case is a law unto itself. Another thing to be borne in mind is that the anæsthesia invariably deepens after the removal of the face piece. The period of anæsthesia varies from about fifty seconds to five minutes. The anæsthesia is followed by an analgesic state, and, though the patient is partially conscious, two or more teeth may be extracted without pain. If a large number of teeth is to be extracted, it is wise to tell the patient beforehand that, though he may return to consciousness before you have removed all the teeth, he will experience no pain, and that you will stop as soon as he feels the slightest pain. This often will do away with having to repeat the anæsthetic. This analgesic state is in itself a strong recommendation for somnoforme, as compared to nitrous oxide. Often the patient seems to be conscious, when in reality he is not, and an allowance for this can be made while operating. As a usual thing, the patient will resuscitate involuntarily, but in case he does not recover consciousness readily enough, a little fresh air gained by opening the window at the top and fanning will accomplish his rapid recovery, or a cold wet towel applied to the face, or opening the eyes to admit the light. It will never do any good to shake the patient or yell at him. Usually a little patient waiting and watching is all that is necessary.

Nausea and vomiting are the exceptions and not the rule. I have had only one case of nausea, and that was very slight and lasted only a few minutes. I have never had any vomiting to occur. It is more than probable that when nausea or vomiting does occur it will be found to be due to the swallowing of blood. We should therefore see that the patient does not swallow any blood.

I always have a little porcelain-lined cup close at hand that I hold under the patient's chin after the operation is completed, holding his head in such a position that the blood will not run down his throat. There is a class of patients that take any general anæsthetic badly, and they are alcoholics and inveterate users of tobacco. The ordinary tobacco user takes it all right. I would never advise the administration of somnoforme after the patient had just partaken of an alcoholic drink, for fear of overstimulating the heart, and I always inquire as to this when I have any doubt about it.

In conclusion, let me sum up my reasons for preferring somnoforme to nitrous oxide for minor surgical operations. With nitrous oxide it takes from a minute to five and sometimes longer to anæsthetize the

patient. With a small dose of somnoforme, 2½ to 3 cubic centimeters, we produce anæsthesia in about thirty seconds and get twice as long an anæsthesia as with nitrous oxide. When somnoforme is given correctly, there is no suffocation, as with nitrous oxide. When somnoforme is given, the patient remains quiet throughout the operation and does not disturb the operator; with nitrous oxide the reverse of this is often true. With somnoforme there is no cyanosis, and with nitrous oxide there generally is cyanosis. If there are friends present, the appearance of the patient under somnoforme is not alarming; under nitrous oxide the patient often does present an alarming appearance. Somnoforme is much more easily administered than nitrous oxide and requires no cumbersome apparatus and we don't have to bother with cylinders.

Personally, I say without hesitation that I always prefer giving somnoforme to nitrous oxide in my practice, for I believe that we get better results with somnoforme than with nitrous oxide, and with less danger to the patients. It is my purpose to administer somnoforme before you for the performance of some minor surgical operation. I shall use the inhaler that I have used in my practice, and anyone who has not seen a similar one is welcome to examine it.

Before closing, I feel like saying that we, as a profession, have reason to feel proud, in that Dr. Horace Wells, a dentist, gave to the world nitrous oxide gas, which has served us faithfully and well; also he was the first to demonstrate the anæsthetic properties of sulphuric ether; and now we have somnoforme, the safest of all general anæsthetics, the work of Dr. Rolland, another dentist.

The paper was discussed by Drs. J. R. Osborne, Spurgeon, Patterson and Geo. A. Carr.

A paper was read by Dr. B. F. Hall as follows:

AN IDEAL PORCELAIN CROWN.

Dr. B. F. Hall.

The art of restoring badly broken-down teeth by the use of porcelain crowns has been practised for many years, and at the present day is one of the most important branches of our work. The practical and esthetic value of this class of crowns has long been established, and with the advent of the new platinum band on all porcelain crowns this work has well-nigh reached a state of perfection.

There are so many varieties of porcelain crowns, and so many modifications and methods of making and setting the same, that it would consume too much time to refer to them all. I have therefore confined my paper to a description of the construction of what the writer believes to be an ideal crown for all teeth, upper and lower, anterior to the first molar, and in some cases may be used with advantage for the molars.

In my opinion, a tooth should not be crowned when there is good reason to believe that it can be saved for two or more years by filling, except in cases of bicuspids, and occasionally in molars where there is a great probability of the tooth fracturing or splitting after it is filled, in such a way that it would be necessary to extract it, or be exceedingly difficult to crown later. Take for example a bicuspid with the two approximal walls and the occlusal surface destroyed by decay, with the buccal and lingual walls frail. This tooth may be filled and last for a number of years, but the probability of its fracturing in such a way that it would have to be extracted is too great, and I believe that we would be doing our patient a better service by cutting down the frail walls and restoring the lost crown with a strong, well-adjusted porcelain crown.

Probably the most important step in constructing a porcelain crown is the thorough preparation and proper shaping of the root, as the ultimate success of the crown depends largely upon the thoroughness of these preliminary operations. The root canal should be thoroughly cleansed and enlarged sufficiently to receive the post, and the apical foramen hermetically sealed with gutta-percha. After the end of the root has been thoroughly sealed, with a pointed fissure bur cut away the remaining portion of the crown and grind the stump down to the gum line; cleave off all enamel, thus leaving the stump cone-shaped, with greatest circumference at the gingiva. Take a measure of the stump and construct a band of pure platinum, No. 30 g. After the band has been trimmed and shaped and the gum anæsthetized, force the band in position on the stump, and with a square-faced carborundum wheel cut band and stump down together until the band is well hidden. Remove the band and solder on cap of pure platinum, No. 36 g, and place it back in position and puncture cap to receive the post. After the post has been forced through the punctured cap into the root canal, leaving it projecting about one-sixteenth of an inch above the cap, warm a piece of modeling compound and take a small impression of the cap and post while in position on the root. After the modeling compound is chilled, remove it and place the cap and post in position in the impression, and run fireproof investment into the cap and around the post, and after the investment has hardened remove the modeling compound and solder the post to the cap.

The post is made by holding two pieces of 20 g. iridio-platinum wire parallel and in contact and soldering them together with pure gold. After the post is soldered to the cap, place the piece back on the stump and take a bite in modeling compound and run plaster models and fasten them on the articulator; after separating the models, grind and adjust the facing, leaving ample space between the cap and facing to be filled with porcelain body. The facing is now waxed in position and the unfinished crown removed from the model, inverted, and the pins of the facing soldered to the projecting post or to the floor of the cap, as the case may suggest, all soldering being done with

pure gold. The soldered piece is now returned to the root, when the facing may be adjusted by twisting or grinding to perfect the occlusion; and if the soldering has been done properly, the facing may be twisted into any position within reason without danger of fracture. After the adjustment is complete, mix and bake porcelain body into the space between the cap and facing, adding small quantities of porcelain from time to time and rebaking till crown is finished.

By using low fusing porcelain body and an ordinary amount of precaution in heating the furnace, there is practically no danger of changing the shade of the facing.

If the crown is being constructed for a bicuspid or molar, a saddle-back tooth is used instead of a facing, and if the crown is to have more than one post 20 g. wire is used. This, in the opinion of the writer, is the strongest and most esthetic porcelain crown made.

My experience in making these crowns has been confined almost entirely to the use of Brewster gold matrix porcelain. I have no doubt, however, that good results may be obtained from the use of other bodies.

The paper was discussed by Drs. Hunt, Scheffer, G. A. Carr, Bland, Newberry and Gorman.

In the absence of Dr. J. H. Judd, of Fayetteville, the Secretary read the following paper prepared by him:

ALL IS NOT GOLD THAT GLITTERS.

Dr. J. H. Judd.

I sometimes think we get too optimistic on the subject of crown and bridge work, as well as in some other lines of our work. I don't like to be pessimistic, but I think it well enough to look a thing square in the face and occasionally hang out a danger signal. In order to improve, we must watch very closely our mistakes, which, if properly regarded, prove to be stepping-stones toward the heights of perfection, in whose land most of us would not be very much at home, though our aim should be to make some acquaintances in that sublime region even in the matter of doing crown and bridge work. But, oh! when we have a patient with a bridge with shell crowns for abutments and all around the neck of those crowned teeth inflamed, the crown standing off from the tooth at this point, with foul secretions, food particles, etc., collected there, we feel like using the old adage, "All is not gold that glitters," and we also feel like saying to the carpenter who made that bridge, "*Esse quam videri.*"

I have seen a few beautifully constructed and nicely adapted bridges with normal occlusion. I have seen more beautifully constructed and not so nicely fitted ones, with occlusion somewhat im-

perfect. I have seen many poorly constructed, badly adapted ones, and the occlusion very imperfect. I believe I am not far wrong when I make the above statement, and that a great many of you would testify to the same statement in your own experience. I believe that good bridge work is one of the greatest achievements of the dental profession in the restoration of nature's organs of mastication. But poor bridge work is, of all abominable things, the most horrid. We should use good judgment in placing bridges in the first place; should not place them in every vacant space in every mouth whose owner has the means and disposition to permit it, just simply because you wish to do bridge work and without regard to its successfulness.

The two greatest evils I have noticed are lack of properly adapting crowns at neck of tooth (sometimes extending too high under gum) and improper articulation of crowns, as well as the teeth of the bridge; the first causing inflamed gums and unsanitary condition of mouth, and the latter causing broken porcelain, caps worn through, dead nerves, loose teeth, etc. Most of you have seen these evil results, I'm sure, until, like me (at times), you felt like saying, as Solomon, when he had sought in vain for happiness—in wisdom, riches and all the glorious things of this world—"Vanity of vanities, all is vanity."

But we must not be discouraged, for we have seen enough successful operations, pleasing both to patient and operator, to inspire us to greater efforts along this line of work. We should not be satisfied as a profession until we have made the number of successful operations in bridge work greater in proportion to the number of failures, and to do this every dentist should be careful in selection of cases and then do his best. Our aim should be perfection. Remember, the men behind the guns (in war or in sport) that aim to kill do not shoot at random, are the ones that make things happen. Their guns and their shells may be no better than their comrades' who shoot without definite aim, but their results are very different.

A man may be able to do nice soldering (which in itself is very enviable) and make a beautiful piece of work to look at in the laboratory, and yet, when placed in position, come very short of being a thing of beauty, if it means a joy forever. I have said that perfection should be our aim; then success should be our motto. I want to give you a definition of "success." A Northern firm offered a reward of $140.00 for the best definition of this word, and it was won by Mrs. Stanly, of Lincoln, Kansas: "He has achieved success who has lived well, laughed often, and loved much; who has gained the respect of intelligent men and the love of little children; who has filled his niche and accomplished his task; who has left the world better than he found it, whether by an improved poppy, a perfect poem, or a rescued soul; who has never lacked appreciation of earth's beauty, or failed to express it; who has always looked for the best in others and given the best he had; whose life was an inspiration; whose memory a benediction." Who can measure up to this standard?

Discussion was made by Drs. Patterson, Everitt, Fleming, A. H., and Alexander.

The following paper was read by Dr. C. A. Whitehead:

CROWN AND BRIDGE WORK AND ITS IMPORTANCE IN DENTISTRY.

Dr. C. A. Whitehead.

Mr. President and Gentlemen:

When I was asked some time ago if I would write a paper on Crown and Bridge Work, I hardly knew what to say. I had been invited to write several papers, in years gone by, for the Society, and I always had a very nice way of getting out of it. But, as I attend these meetings year after year, enjoying every minute of them, I would always go back to my office ashamed of myself for not doing anything.

I will make a faint effort to give in detail crown and bridge work and its importance in dentistry.

Where is Bridge Work Applicable?

Whenever there is a space between the remaining natural teeth. When one or more natural teeth are lost, the strength of the arch and its ability to resist impact and the force of mastication is weakened, lateral support is gone and the teeth at each side of the space (having no neighbor to help support them in position) move about, caused by food glancing against them, and eventually become loose. The teeth of the other jaw, having no teeth to bite against, lengthen and become loose.

Aside from the unsightliness from the loss of teeth, the unprotected gum is wounded and rendered sore by hard substances in food, causing much pain from chewing, and leading to shrinking of the gums. Clear speech is interfered with, and, on the whole, one is made miserable by these defects.

When one or more teeth are gone, but three or four remain, or even good roots, these teeth or roots can be capped and the space bridged by using natural teeth or roots as abutments or standards, to which the bridge is anchored delicately, yet firmly, strengthening the remaining natural teeth by mutual helpfulness in sharing the work of mastication.

Fixed Bridge Work.

It is useless to attempt specifically to describe the many methods which have been devised, and while many of them have already proven to be impracticable and some have even become obsolete, yet many others possess such merit as to practically demand classification.

Among the most prominent types is the one wherein the presence may cause an interruption in the otherwise continuous relation of the individual parts comprising the piece, and the type of construction resulting is termed an interrupted bridge.

It is a better rule generally to use a maximum instead of a minimum number of abutments; still there is undoubtedly a limited class, where the use of certain remaining sound teeth is unwise and therefore contra-indicated. It is true that such cases are the exception, and yet, when they do present, it would be very unwise to involve a good tooth which is not needed in the support of the bridge. Such breaks in the continuity of the structure should rarely if ever exceed the space of a single tooth, and this should be mainly in the upper denture and anterior to the first molar. In the application of such a type of construction, it is absolutely necessary to observe that the connection between the parts on each side of the remaining tooth to be made in such manner as to insure adequate strength in the completed structure and a relation between the connecting bar, the tooth and the gum, which will afford opportunity for cleanliness, admit of the normal occlusion and offer as little obstruction to the movements of the tongue as possible. To obtain the latter result the bar should rest lightly upon the gum, but should not come in contact with the natural tooth.

Porcelain Bridge Work.

The application of porcelain to the construction of bridge work may be recorded as being among the early achievements of modern dental ceramics, and, while still perhaps in more or less uncertain stage of development, it has nevertheless always been regarded by those who recognized its cosmetic and hygienic possibilities as the ideal type of prosthesis.

Unfortunately, however, an early wave of enthusiasm following its introduction by Land, Parmley, Brown and others led to such general and indiscriminate use as to bring grief and discouragement to those who became overzealous, and who, while quick to appreciate its possibilities, were equally slow in recognizing its limitations.

As a result, a very large proportion of the primitive efforts in this direction were such signal failures as to dishearten even the most sanguine, and the process and development which had previously seemed so desirable and so certain was thereby materially retarded.

For the reasons that purely cosmetic and hygienic "possibilities," however, do not encompass the entire range of the requirements of dental bridge work, such a result was but a natural sequence essential to the experimental stages; and, since it is largely by our failures we learn, this era of disaster and discouragement was by no means unproductive, for it served to develop the faculty of reasoning and the power of discrimination to an extent which awakened recognition of the fact that porcelain has its limitations.

If it is conceded that all of the combined requirements in the composite—and to the highest possible degree—must obtain in any class of work destined to be permanently successful; that porcelain is a vitrious and friable substance, by no means indestructible, and that inherent strength is one of the prerequisites of bridge construction—all of which are indisputable—it is then evident that porcelain work is not universally applicable, and that, when it is employed, a degree of strength commensurate with the requirements must obtain.

On the other hand, and irrespective of these facts, its application embraces so great a field of usefulness as to insure its permanency as an art; and this field, circumscribed though it may be, will increase in proportion as the aim of the higher artistic attainment is cultivated and developed, and in proportion as a more definite knowledge of the limitations may be recognized and the actual requirements observed.

Success or failure will therefore depend largely upon two factors—first, upon judicious application; and, second, upon an observation of such details of technique as are essential to insuring a maximum degree of strength in the finished piece.

In order that the application may be judicious, however, it is obvious that the conditions must be favorable, and when they are not, or may not be made so, porcelain cannot be conservatively employed, and is therefore contra-indicated.

In studying the conditions which are favorable to the application of porcelain bridge work, the inherent physical characteristics of this vitrious, friable substance must be recognized, and, whilst it is capable of withstanding stress to a degree, the stress to which it may safely be subjected will increase in proportion as its thickness or "bulk" may increase, and will decrease correspondingly.

It is therefore evident that the application of porcelain bridges is indicated only in such cases as present an extent of absorption and an occlusion which are favorable, or, in other words, a condition where ample space exists, for only under such circumstances may opportunity afforded for the use of sufficient bulk to prove adequate to the demands for integral strength.

Removable Bridges.

As the extent of absorption increases in proportion to the length of time elapsing since the loss of the natural teeth, together with the number which are missing, and as the application of "fixed" bridges to very extensive cases is rarely indicated, it is apparent that porcelain bridge work is more generally applicable to removable structures, where ample space, support and protection is afforded, than to bridges which are designed to be permanently attached to the supporting teeth; and when application is confined to this case of construction, the very highest type of cosmetic, hygienic and serviceable prosthesis may be obtained.

I will not undertake to describe the construction of any special bridge, or how it should be made, as this is very hard to do successfully. I will say, however, that with the experience I have had, it is necessary, and very necessary, to use a lot of common sense to get good results; and when the teeth are diseased or inclined to be loosened, it is best to give the patient the benefit of the doubt.

In most cases, where the work is properly constructed and good judgment is used, there is no reason why we should fail.

Just a few years ago crown and bridge work was in its infancy; in fact, very few of the dental colleges had a demonstration in that line of work. To-day it is taught by every reputable college throughout the land, and hundreds of practitioners are making a specialty of it.

Advantages of Bridge Work Summarized.

1st. The perfect replacement of lost teeth by artificial ones, and without the use of a plate.

2d. The absence of any mechanical contrivance to interfere with the tongue, with either speech or song.

3d. The natural teeth are not abraded by the presence of claps, the functions of the sense of taste are more perfectly performed, and a healthy condition of the tissues preserved, because the gums and palate are not covered over with a plate.

4th. The solidity and immovability of the bridge at all times, both in speech and mastication.

5th. The weight of the bridge and the strain of mastication are proportionately distributed on the natural teeth, which are better suited to sustain them than the gum and palate.

6th. Its special adaptation to the replacement of single teeth or small number, where bridge work is usually superior to any other device.

7th. While all other operations performed for the restoration of lost teeth, like other remedial operations, are temporary rather than permanent in their results, bridge work, as regards permanency, takes equal rank with any other operative procedure.

The paper was discussed by Dr. Spurgeon.

The following paper was read by Dr. R. G. Sherrill:

PORECLAIN AS A FILLING MATERIAL.

Dr. R. G. Sherrill.

As there have been a great many things written and said about porcelain in the past few years by men who are high up in the profession and who have studied the art of porcelain filling thoroughly, I feel my unfitness to write a paper on this subject, yet I will endeavor to give a few practical points in filling teeth with porcelain.

Porcelain as a filling material has only been perfected to that extent where it has been universally used by the profession within the last six or eight years.

In porcelain we have come nearer obtaining a more natural tooth restorative than in any other filling material. It possesses the following characteristic properties of an ideal filling: It has good color; prevents decay; is a nonconductor; is of comparatively easy manipulation to the operator, in that it taxes the mind more than the body; is easy on the patient; makes undercuts unnecessary; and it resists all action of the oral fluids. The main objection to porcelain as an ideal filling is its lack of retention and strength. In a great many cases cement alone is responsible for the retention of the filling, and in those cavities where the stress of mastication is brought to bear on the margins I believe a metallic filling stronger and more durable.

Now, there is one class of cavities, such as simple cavities of the labial and buccal surfaces, where, in my judgment, porcelain makes an ideal filling, as there is no stress, by reason of mastication, brought to bear upon the filling, and the cavities can be prepared in a way that, with cement, it will hold as long as any other filling. The dissolution of cement around fillings of this character can be due to chemical action only, but in cavities where the stress of mastication falls on the margin the dissolution of the cement will be due to both mechanical and chemical action.

I will not endeavor to go fully into cavity preparation, but will give a few practical points which I have found beneficial. The cavity must be shaped in such a way that after the inlay is baked it will enter without much separation, if it be an approximal cavity. There should be no undercuts in the cavity, unless made after the filling has been finished; then small undercuts at one or more places can be made to aid in the retention of the filling. The cavity, if approximal or labial, should have a slight depression in the cervical wall; this will aid in its retention, as any force coming in contact will tend to wedge it in rather than out.

In preparing labial or gingival cavities, instead of making the saucer shape as some operators suggest, I prefer taking a round bur, size according to cavity, and cut a slight depression around the edge of the floor of the cavity, leaving a slight elevation in the center. This insures you against the slipping of the filling upon setting.

In preparing the cervical wall of cavities of this kind, if an undercut bur be used, held in such a manner as to cut slightly deeper in cavity than at the margin, but to shape the incisal wall so that it will not cause any undercut, it will add greatly to its strength and retention. The margins should always be cut so that there will be no thin edges to the filling when finished; for if there are any thin edges of porcelain around the margins they are apt not only to chip off while setting, but at any time during mastication.

Burnishing the matrix seems to be the greatest trouble with most operators. I find that with the use of Rowan's platinum for inlay work, the burnishing of the matrix is comparatively easy. Have the platinum thoroughly annealed by running it through the furnace before starting; then, by holding a piece of platinum, slightly larger than the cavity, in place, start in center and with ball burnisher gradually work to the edges. After having a slight depression in the platinum, enough to see the outlines of the cavity, I use the regular inlay burnisher, which has a piece of pliable rubber at its end, and by gradually working it down from center to margins I finally have it pretty near the shape of the cavity. (A lead pencil which has a cone-shaped rubber can be used with just as good results.) I then use wet cotton or spunk with burnishing pliers and force the platinum to all parts of the cavity. The matrix may break while doing this, but unless the break extends to the margins no harm is done. There are comparatively few cavities in which the matrix can be thoroughly burnished without tearing. Burnish well around the margins, and in removing matrix from cavity great care should be taken that it does not change shape. By packing gum camphor into the matrix before it is removed, it will not only force it to all parts of the cavity, but will aid in retaining its shape on removal. The camphor can be burned out, leaving no residue.

The next step is that of obtaining the correct color by use of the shade guide. Here is one of the most difficult things with which we have to contend, for sometimes you think you have a perfect color, but when the filling is finished you find that it is way off. Sometimes by mixing different bodies the correct color can be obtained. The porcelain shade guide should always be moistened before using.

In baking a filling it should be run through the oven three or four times—the first two times just getting a biscuit bake, and fusing it on the last bake. It is impossible to bake a filling in one or two bakes, on account of the shrinkage of the body. I have found that baking porcelain by time is much better than by eye, as there is too much danger in overbaking if one depends on the eye altogether. I can tell within ten second of when the body is fused, mine being increased according to size of filling.

The inlay should always be tried in before removing the matrix, if possible, as there may be some little place that needs building out; and, if so, add a little more of the body, or, if too much, it can be ground off and fused again. The platinum can usually be removed very easily with a pair of pliers. Then place the inlay on a piece of wax, bottom side up, being sure that the part which will be exposed is thoroughly covered with wax, and put a drop of hydrofluric acid on it and let it stay for several minutes. This etches the surface, so that the cement will adhere to it.

In setting a porcelain filling I prefer Harvard's inlay cement, which

has twelve colors and sets much quicker than the plain. The cement should be mixed rather thin, with an ivory spatula, and with the use of a small instrument should be coated all over the cavity, which has been thoroughly dried. Pressure should then be brought to bear on the filling until the cement has set. Unless this is done, the elasticity and expansion of the cement will push the filling out, so that the margins will be imperfect. The filling should be kept dry for at least thirty minutes after insertion. It is then a good idea to coat with varnish.

To those who lack confidence in the retaining power of an inlay on the labial surface, if they should ever try to remove one, as I had occasion to do several months ago, I believe they will be fully convinced that it is a filling which, when once put in, will stay.

Porcelain is certainly a boon to the profession, with that class of patients who have high-strung nervous temperaments and for whom it is impossible to prepare cavities for gold, and, even if prepared, cannot stand to have the filling properly condensed. We all know that the esthetic property of porcelain is far better than any other filling material we have. In fact, I have seen porcelain fillings when the color was absolutely perfect.

I believe porcelain as a filling material is here to stay, and, with the improvements in the appliances each year, I believe we can get better results as we go along.

A paper by Dr. F. L. Hunt, being on a similar subject, was also read:

RESULT OF MINUTE OBSERVATION IN PORCELAIN.

Dr. F. L. Hunt.

Observation is the basis of a large part, and probably the most important part, of our knowledge. Upon that basis depends to a great degree the success of most men. Without it, one must necessarily follow fixed lines and rules, without being able to deviate, even when to deviate would be to improve.

Observation stimulates imagination; new ideas are evolved and are generally practical when the result of observation. Mistakes are seen and a remedy suggested to one's mind.

These principles obtain in the practise of dentistry, and particularly in that branch known as ceramics. To the porcelain worker who believes in and relies upon the adhesive property of cement as a means of permanent attachment of porcelain to tooth structure, permit me to state that observation will demonstrate his error and convince him that porcelain inlays are built upon purely scientific mechanical principles and depend thereupon for their retention. An inlay placed in a

saucer-shaped cavity cannot result in other than failure. The cause of the failure is plain to even a beginner in the principle of observation.

The mechanical principle to which reference has been made is often faulty and inaccurate, because of lack of thought and observation. The mere knowledge that grooving is necessary is in itself incomplete. Many illustrations have been seen, both in practical cases and in demonstrations, in which the grooves in the walls of the cavity are not directly opposite to those in the contained inlay. Here the grooves are absolutely worthless, since the cement simply restores the portion removed by grooving, except that perhaps they give a small amount of adhesion of inlay to cavity. With the grooves referred to directly opposite each other, when filled with hardened cement, a key is formed, which holds the inlay firmly and securely in place. By adhering closely to this principle, the porcelain inlay is as permanent in its attachment as any filling, of whatever material, can be. It has frequently been observed that the tendency is to cut the retaining groove as far from the base of the inlay as possible. This is the greatest mistake, since it then becomes necessary to cut the retaining groove at or nearly at the margin of the cavity wall, thus lessening its strength. On the contrary, the groove in the inlay should be cut as near the base of the inlay as possible, consistent with strength, thus permitting the groove in the wall of cavity to be as near its base as possible. This gives greater strength to the retaining cavity, since we are enabled to secure anchorage in the dentine instead of depending upon the thin and very often frail enamel. Furthermore, we have not produced a transparent line of enamel through which cement will show.

Another point which need be given attention here is the principle governing the shape of the cavity. Cavities whose walls are slightly farther apart at the margin than at the base are most satisfactory—in other words, those whose walls from margin to base are so nearly parallel as to make a cavity just short of being retentive. Here the inlay adapts itself most closely to the cavity having the minimum amount of cement space, without throwing too great strain upon the sharp margin of the inlay. To avoid chipping this margin is an important point. Much of the beauty and permanency of the porcelain restoration depends upon the clean, clear-cut contact of porcelain to margin of cavity walls.

The near approach to a retentive cavity makes the removal of the matrix, in its perfectly accurate shape, an operation of extreme delicacy in its manipulation. The necessity of adapting the matrix to the cavity walls and floor increase the difficulty of manipulation. The introduction of gum camphor or other similar inflammable materials serves a double purpose of adapting the matrix to the wall and retaining the matrix in the form of a *fac-simile* of the cavity during and

after its removal. The camphor is then burned out, leaving the matrix in an accurate and unwarped condition.

Observation has demonstrated that the matrix should be properly burnished to margin before its removal, the last burnishing being done over a tape or strip of dam drawn across the matrix, holding it closely against the margin of the cavity. The writer can see no necessity for trying in and reburnishing if the work thus far has been properly done. To be properly done, in cases of approximal cavities, the point of separation must not be overlooked.

Reburnishing after first fusing of porcelain often results in small particles of steel from the instrument becoming incorporated with fused porcelain, causing minute black spots at margin of inlay. Of course, these particles are permanently attached and cannot be removed without destroying the accurate adaptation of porcelain margin to cavity margin. Properly cutting through the porcelain before fusing, thus allowing for shrinkage, permits it to cling to matrix without warping. This is a point upon which special emphasis must be placed. Here also might be mentioned that because of the time required to make a porcelain inlay, careless operators are tempted to insert an inlay which is decidedly a misfit. This act of the beginner has had much to do with giving to porcelain an unfavorable position in cases in which it should occupy an enviable one.

Furthermore, it is no more reasonable to presume that porcelain can be used as a filling material in any and all classes of cavities than to give the same assumption to amalgam, for instance.

It has been demonstrated that porcelain lacks strength necessary to withstand the stress of mastication in molars. This, of course, does not refer to buccal cavities. It is the result of the work of radical operators, which must necessarily teach us the proper course to pursue. It must not be understood that I am speaking disparagingly of the radical man; to him we owe nearly all of our knowledge; we profit by his mistakes. Think of the failures that must have been Dr. Jenkins' and others until finally their efforts were crowned with success.

Comparatively few of us ever evolve a new idea; we follow the thoughts and teachings of others, and we become proficient just in proportion as we give our work casual or minute study.

The papers were discussed by Drs. Scheffer, Johnson, W. Smathers, Newberry, A. H. Fleming, Hunt, Sherrill.

Dr. W. B. Ramsay read the following paper:

THE EXTRACTION OF TEETH.

Dr. W. B. Ramsay.

The extraction of teeth is one of the most frequent operations which we, as dentists, are called upon to perform, and one which a man in full practice must be prepared to meet every day; and yet there is

no subject with which we have to deal that receives so little attention at our hands.

To my mind, it is a matter of gravest importance to the dental practitioner, and one which should receive our most careful attention and consideration. It is a common thing to think that the extraction of a tooth is of little consequence, and that any care of the wound afterwards is of no importance.

There are many ways in which accidents may come to us in the performance of this task, and it is an absolute necessity that we always have close at hand such remedies as would be needed in a time of emergency. To neglect this is to invite trouble.

The removal of a tooth necessarily means the producing of a wound, and a wound once made and neglected, no living man can tell what the result will be; therefore, it stands us in hand to guard carefully every avenue of danger and to anticipate the accidents which may follow.

As careless as most of us are, it is perfectly wonderful to me that complications do not arise more frequently than they do. It is only by nature's unceasing and often successful fight to restore the diseased or wounded parts to health again that we are saved from many a catastrophe. Knowing this to be true, as we must, we should not tempt nature too much, or trust it too far. Because evil results do not follow but seldom is no reason why we should not use every precaution and take good care of the wound after the removal of a tooth, giving our patients careful instructions to return to us for further treatment, should certain symptoms arise; otherwise they may neglect it, to their own discomfort and our undoing.

It was once a common practice to refuse the extraction of a tooth with surrounding parts in an inflamed and swollen condition, but in this day of antiseptic surgery there is hardly any reason why we should allow our patients to suffer untold agonies for four or five days, waiting for the soreness to pass off or the abscess to point.

In all diseases, in order to effect a cure, the cause must necessarily be removed, and the thing to do under such conditions is to extract the tooth. You need have no fear of the result if you will at once thoroughly wash out the cavity with *peroxide of hydrogen*, followed by some one of the various antiseptic solutions on the market.

There are only two conditions under which I would refuse to extract a tooth with the parts so affected: Should the patient be very fragile or badly run down in health, or if there was any doubt in my mind about being able to successfully remove every particle of the tooth at that time, I would decline to operate.

I will say here, in passing, often you are confronted with a tooth root that you have grave doubts about being able to remove with the forceps. In such a case I can heartily recommend to you Dr. Wyche's system with the Howe screw post; and it is less painful than the forceps, under all conditions. More time is required, of course, to

remove a root in this way, but you will be well repaid for the time consumed. The screw elevator I do not hesitate to condemn. The cone shape of this instrument when forced into a tooth is almost sure to split it. In this day and generation people are awfully shy of pain, but I guess it has always been so, with the male part of the race, at least; and so quite a good number of our patients demand the use of an anæsthetic, either local or general, when it comes to the extraction of teeth.

Now, if one wishes to use a local anæsthetic in his office, I have no word of criticism to offer in this paper; but of all the places to administer a general anæsthetic, a dental office is about the last place to choose for it. There are certain reasons which I will offer in support of this statement: There are few dental offices which I have ever visited—possibly one or two—that I thought were properly ventilated for such an ordeal, and with a man in full practice his office lacks that quiet and privacy that is necessary. In such an office you will usually find patients in waiting, which in such a time as this is distracting to both patient and operator, and should accident occur you would possibly have a panic, which would greatly add to your discomfort. It is not at all desirable to undertake to operate under such conditions before a crowded house.

Then the question naturally arises, what are you going to do about it? What remedy do you offer?

Comparisons are odious, but it is a well-known fact that if a physician is called upon to operate under an anæsthetic, he is certain to get that patient into a hospital, if possible, where the surroundings are all favorable and the equipment complete.

Now, we, as dentists, cannot afford to do less. It is our professional duty, as guardians of the health and life of our patients, to place around them every safeguard and protect them as far as we can against any possibility of accident. It is true that not every town in our State is blessed with a good hospital, and so all of us cannot have access to these institutions. Then, in such communities where hospital facilities are lacking, the next best place that suggests itself to my mind is in the home of the patient, for there you can at least have the necessary privacy, and, should fatal results follow, which sometimes happen, as we all know, it would be far better for you than to have had it occur in your office.

The extraction of teeth is one of the few surgical operations which we have to perform, and we should treat it strictly as such.

Before closing this paper, I will call to your attention an address delivered before the South Carolina Medical Association by Dr. P. B. Barringer, of the University of Virginia, on the subject of "Drugs that Enslave Us," in which he urges the adoption of a law requiring the registration of every hypodermic syringe kept by druggists or others, and forbid its sale to any except to a licensed practitioner. Such a law, I think, would be of especial interest to dentists, as well as physicians, and I think we all can see the wisdom of it.

The paper was discussed by Drs. Wyche, J. R. Osborne, Harris, Hartsell, G. A. Carr, Gorman, Everitt.

Two papers were then read and discussed jointly—one by Dr. N. G. Carroll:

DENTAL EDUCATION.

Dr. N. G. Carroll.

(Unfortunately, this paper was lost and could not be replaced.)

And one by Dr. A. H. Fleming:

MODERN DENTISTRY.

Dr. A. H. Fleming.

So broad is this theme that volumes might easily be written to its credit, and still the topic would be inexhausted, and it is with this consciousness that I shall endeavor to bring to mind a few points and leave the major thoughts for thought's development.

So great and rapid have been the strides in the modern achievements of this science that to all appearances the things which are logical and true to-day may in the light of scientific advancement be illogical and fallacious to-morrow.

The man is narrower than his own brain who says that things may be done only one way, and it is but a truth of scientific evolution that from the ashes of the theories of the past spring the phœnix of practical truth of the present.

Modern dentistry is only practised by the modern dentist, and by the modern dentist I do not restrict that term particularly to those of late graduation nor to those of years of practical experience.

We have but to ask ourselves the question, are we modern or do we adhere tenaciously to that which we have learned by course or experience, to the exclusion of that which has been developed by others and proven good? Do we follow these things blindly, to the detriment of modern methods, simply because we are not prepared to do it, or because we have not the patience to study it, or because we have not the skill to perfect it? Are we modern, in that we have long since ceased to advise dentures in preference to bridges, simply because we have not learned the art of crown and bridge construction? Do we advise the use of gold filling in preference to the porcelain inlay, because we have no furnace? Do we recommend the indiscriminate use of alloys in posterior teeth as a tooth saver and preserver in preference to the gold inlay, just because we have no matrix gold and have never learned to make a matrix?

I am free to admit that the practice of the future must some time

turn to prophylaxis and plastics, but the plastics now before us do not warrant their use to any satisfactory extent.

Do we endorse the old school of orthodontia and extract teeth which should be retained in the arch, simply because we do not care to construct bands and appliances to expand or contract the arch, as the case may require? I do not mean to say that we always have a chance to exhibit our best judgment nor dexterity on every patient that we have, but we can at least hold high the standard and let the patient fall as far short of what is best, as their circumstances necessitate.

If we are not modern in skill, we can at least be in spirit, and never condemn that which is done by other operators, simply because we cannot do it ourselves. We can all fix our ambitions on perfect dentistry, and there will be enough of us to fall in graduated degrees, short of the climax, to supply good, medium, and poor operators to supply every class of human need.

The first thing necessary for the practise of dentistry is preparation. Then comes equipment, and then is developed qualification. Practise is most essential, and experiments and study can in nowise be neglected. The efforts of the experimentist and the force of the student will ever rise triumphant over the dormant, satisfied diploma holder. All that any diploma should mean is that you are prepared to learn, and all that any license should grant is your privilege to do so. Many of us come from college knowing it all, and many, after years of practise, know less of real dentistry, but have highly developed that faculty of looking wise and telling our special methods of doing things that we really read from a journal and have never done at all. Lucky for advice fiends that they never have to show their hands.

It is a most unfortunate circumstance that the poorest, most uneducated and poorly equipped of all men who enter professions enter the profession of dentistry, and statistics will bear me out in this statement. As a result of the foregoing fact, we have a greater number of men in the profession who have not as high sense of moral and ethical development as is to be found in any other profession. Both of these qualifications being innate in a man, and only developed in each to degrees in accordance with their circumstances and environments, we find the greatest difficulty in keeping the standard of professional respectability where it should be kept. If these principles were instincts or propensities rather than the results of restrictive legislation, there would be no men in this Society who would stoop beneath proper professional dignity and barter their skill and work for timber, chickens, or hams, as has been the custom, and is now, of some men who still hold their membership in this Society.

If we had more men who were known by their ability rather than by their cards in the daily and weekly papers of the State, we would bring our profession into better repute as a science worthy of recognition. If we had more men who would not deign to stoop to allow

their names to appear in newspapers over notices calling attention to special methods of operating and guarantees, as is done by some in this Society, we could easily establish a scientific prestige worthy of that for which we should stand.

It is in no way my purpose to question the ethics of these customs, but I do gravely question the spirit which prompts it and the taste which allows it. If we had an honorable, high-toned ancestry back of our profession, and this with modern developments in dental art, how much better would the dentist of to-day be, and how much better off would the trusting public of the present and future be! We can place our profession on a strict business plane without in the least making it commercial. We can separate friendship and business for both's sake and not to the detriment of either.

We should begin with the consciousness that our first duty is to ourselves and those dependent upon us, whether it be family or that high duty we owe our profession, and never allow ourselves to be classed with those dental philanthropists who extract teeth for twenty-five cents and for sweet charity's sake and at the same time owe every man, woman and child in the place who is fool enough to extend us credit.

We should modernize our societies in such a way that only worth will receive its reward and forever take from the minds of all the idea that you must pay into this Society a stipulated sum in dues and wait a certain number of years before your efforts are at all appreciated, no matter how humble may be your achievements. So lofty should be the ideals and ambitions of the men in this Society that their energies and results will awaken the sleeping dental drones to a realization of their duty to the Society and make them feel that honors should not be dispensed to young incompetents, time waiters nor gray hairs, but only to those whose interest in the welfare of this Society and whose merit deserves them. The custom of routine honor conference in any organization will stagnate its development and convert a leader into a follower. No man should hold any office in this or any other organization whose qualifications do not entitle him to it. The world is nowise willing to give back to an individual more than he has added to its maintenance and advancement, for just so certain as the laurels won and deserved by one man are placed upon the head of another, just so sure have you robbed the man of his worth, his achievement of its magnitude, and the laurels of their significance.

It is not my purpose to upbraid this Society or its members, because I know that in it we have the flower of the dental profession of the State of North Carolina, and a flower which is not willingly enriched by pollen other than the best. It is my desire that we keep before us the pure light of perfection, and measure ourselves not as we measure others, but as others measure us. It is my ambition that this Society be known not as a body which must exist through necessity, but one

known only by the high ideals, achievements and *personnel* of the men who compose it.

This Society has never been willing to stand only in the ranks, but with each successive meeting it mounts a round higher on the ladder of leadership, and may its strides be continuous until the ladder be exhausted and through our efforts place dentistry at the top—perfection.

The papers were discussed by Drs. Norris, Horton, Everitt, Cole, Carroll, S. W. Foster, A. H. Fleming.

Report of Publishing Committee:

Accepted with thanks.

Your Committee on Publication begs to say that it regrets an unavoidable delay in getting out the work. Imperfect stenographic work, coupled with a strike in the printing office, were the chief causes. The work is far from perfect, but is the best your committee could do, under existing conditions.

J. H. Wheeler,
Publication Committee.

The following paper was read by Dr. J. N. Johnson:

MATERIALS AND APPLIANCES.

Dr. J. N. Johnson, Goldsboro, N. C.

If there is a subject difficult to handle interestingly, it is that of material and appliances. While it embraces everything with which we are most familiar in our daily toil for the restoration of tooth structure, its field of usefulness is so wide, yet so well known, that we lose consciousness of its magnitude and importance.

I am not going into the subject deeply, but with your permission I shall endeavor to present for your consideration a few of the materials and appliances with which we are more intimately associated.

Gold.

When a filling material is mentioned, "gold" generally finds first place, not because of its æsthetic properties, but as a matter of sentiment.

While porcelain has lessened, to a considerable degree, its usefulness as a filling material for the anterior teeth, yet by no means has its usefulness in the mouth decreased; for example, in combination with porcelain for crown and bridge work and as the proper material for the restoration of the cutting edges of incisors and the occlusal sur-

faces of molars which have been lost by abrasion. In fact, what cannot be done with porcelain can successfully be accomplished with gold.

Dr. Jones, in his excellent paper, read before this Society at its last meeting, says: "Do not use gold in children's teeth until the sixteenth or eighteenth year." I suppose that his reference was to the cohesive and noncohesive forms. However, I would suggest that in many cases a gold inlay may be successfully employed at an earlier age.

Noncohesive Gold.

Soft or noncohesive gold has a place in dentistry peculiarly its own, both as a time and tooth saver. Especially is this the case in the proximo-occlusal surfaces of the bicuspid and molars, where the cavity extends well up to the cervix or under the gum, where there remains a sufficient labial and palatine or bucco-palatine wall to wedge our filling against. This is best done with the Harris soft-gold hand-plugger, and should be finished with cohesive gold.

Porcelain.

Porcelain is one of the latest adjuncts to the profession—one of the best materials, and decidedly the most æsthetic. It has its definite place of usefulness; therefore, it has come to stay. For restoring cavities in teeth removed from the stress of mastication, porcelain must necessarily be the best filling.

We have a high and low fusing porcelain. The Jenkins body is, I believe, conceded to be the best low-fusing porcelain. However, I know nothing of its merits, having worked only the Whitley and S. S. White high-fusing body, with which I have obtained splendid results.

Amalgam.

Amalgam was first brought to the attention of the dental profession in the United States during the year 1838, through the advertisement of two Frenchmen by the name of Crawcour. It was called by the Crawcours the Royal Mineral Succedanum. Succedanum, meaning substitute, from the fact that it (with its other desirable qualities) enabled its possessors, through easy manipulation, to fill a class of badly decayed teeth with frail and broken cavity walls, such as had never before been attempted by the most skilled workers in gold. This naturally reflected to the credit of the Crawcours, and they did a land-office business, notwithstanding the most bitter condemnation of the only dental association then in existence—in fact, so bitter was the denunciation of amalgam that the American Surgeon's Dental Association met and passed a resolution to expel any member refusing to sign a certificate pledging himself not to use any amalgam. Suffice it to say that amalgam has lived to see the dissolution of the American Surgeon's Dental Association, and it is to-day, in spite of its shrinking, bulging, spheroiding and crevicing, our best plastic filling material.

Cement.

About forty-six years ago M. Sorel devised the combination of ZNO and a solution of $ZNCH_2$ for the filling of teeth. The time required to disapprove its claims as a permanent filling was not of long duration. Its chief use is that of a lining material to strengthen frail walls, to improve and restore the color of teeth, to retain porcelain and gold inlays for the setting of crowns and bridges. Under this plastic lining there never appears decay, and under its influence soft and chalky dentine is toned up to a stage of usefulness found under no other plastic filling; but as a filling material it is a patient loser, unless we go into a detailed explanation at the time of insertion, as it is easily affected by attrition and the fluids of the mouth.

Tin was discovered in America in 1846, near Jackson, New Hampshire. The purest tin used, and that best adapted for dental use, is obtained from Malacca and Baruca, India, of which the Baruca tin is the purer, being 99.9 pure. It fuses at 442 degrees F. and possesses the peculiar property of excessively reducing the fusing point of the nobler metals. It is a poor conductor of electricity and slow in thermal change, owing to the size of its octahedral crystals, which are formed on cooling. Owing to its low fusing point, it is the principal constituent in all alloys, dies, etc., being used as a base in Watt's and Wood's metal. Tin is readily oxidized, and for this reason the different forms of tin used in filling teeth should be more carefully handled than cohesive gold. There is a slight discoloration of tin upon exposure to oral secretions, due to the formation of tin oxide. This discoloration is, however, a favorable indication, for, while it does not destroy the color of the tooth, it is indicative of a slight expansion, thus coincidentally a therapeutic action on tooth structure, due to the presence of metallic salts. In combination with cohesive and noncohesive gold it has a wide range of usefulness, because of its easy manipulation and adaptability. Then, as a nonconductor, it can be successfully used with gold in deep-seated cavities. Its cervical adaptability is one of its strong points in the preservation of tooth structure.

Appliances—Separators.

I rarely use a separator, other than the staple growth of our Southland—cotton. It will do all the work without pain done by the various makes of the mechanical separator, and only requires a little additional time.

The single-bow separators have the objectionable feature that in application one point crowds into the proximal space and down upon the gums, preventing the passage of finishing strips and often the introduction of a bur in making and undercutting the incisal angle of a cavity in the incisors. The White Universal and the Perry are perhaps the more desirable. However, I leave this to discussion.

Matrix.

"A matrix is a mold which gives form to material forced into it." By its use a cavity is changed from a difficult or complex form to that of a simple one, thus facilitating the manipulation of the filling material.

I will say, for one, that, although I do myself occasionally use a matrix for a gold filling (yet on the distal surface of a cavity the matrix border is in plain view), I have just a little more confidence in those built up without it.

The proximal cavity back of and including the canine are the most difficult to fill, especially the distal-proximal cavities. It is in these that the matrix proves itself a vast aid. If, however, it can be used on the mesial without obstructing the view or access, it will be of great benefit. As to the more adaptable matrix and the most serviceable in the greatest number of cases presented for its use, I can speak only for the Ivory, having used no other. It fills only one interproximal space. It, however, requires the occasional wedge at the cervical border.

The paper was discussed by Drs. Harper, Jones, Richardson.

A memorial service was held in memory of Dr. E. F. Early.

A paper was read by Dr. Dameron as follows:

EDWIN FRANCIS EARLY.

Dr. L. L. Dameron.

Edwin Francis Early was born at Aulander, Bertie County, N. C., January 18, 1870. He received his preliminary education at Aulander Academy, in which he was a pupil from 1880 to 1887. In the last-named year he entered Wake Forest College, from which institution he graduated with distinction in 1890. After his graduation he taught school in South Carolina for two years, taught for a short time at Nashville, N. C., and in 1893 he entered upon the study of dentistry at the Baltimore College of Dental Surgery. He graduated from this college in 1896, valedictorian of his class. He located at Louisburg, N. C., for the practise of his profession in May, 1896. He moved to New Bern in February, 1898, where he remained till his death, September 1, 1905. He was married to Miss Lucile Pleasants, of Louisburg, N. C., November 15, 1898. He left, besides his wife, one child, a daughter, six years of age. He is survived by his father and mother, three sisters and four brothers. He was a Christian gentleman, a useful and faithful member of the Baptist church.

He was taken sick with appendicitis at Hendersonville, N. C., during the last week in August, 1905, and was taken to his home in New Bern, where he underwent an operation, but his strength was too far spent to admit of his recovery, and his sufferings were soon ended by death. Thus passed away one of the most lovable characters it has been my good fortune to know. He was uniformly courteous to all, gentle and patient, a loving husband and father, a dutiful son, an honored citizen and loyal and true friend.

Remarks were made by Drs. James, Whitehead, Harper, Fleming, J. M.

Mention was also made of the death of Dr. Chapple, of Atlanta, an honorary member, and remarks were made by Drs. Foster and Bland.

A paper by Dr. R. M. Squires was read as follows:

BETTER WORK AND BETTER PRICES.

Dr. R. M. Squires.

Being a young member of this Society, I do not feel the weight of authority which belongs to an older man, and therefore ask you to be patient in your hearing, and that your criticism be tempered with mercy, allowing me credit for honesty of purpose and a strong desire for the welfare of our organization as a factor in the upbuilding of the profession of dentistry.

As a profession we have need neither of apology nor explanation, for the value of our work is being recognized rapidly by every class of people.

Every man who wishes to be regarded as a genuine need in the progress of the human race must appreciate the consciousness that he is a real help to the world and not an incubus upon humanity. However, I do not believe that dentistry has the confidence which it is destined to have or deserves. There are a great many intelligent people who respect the dental profession, to be sure, and who have a certain amount of confidence in its work, but they do not believe that dentistry is quite what it professes. They believe that the profession can accomplish much, but they question the standard and efficiency of its work, because a great part of it is not what it should be.

Some of this lack of confidence is due to unreasonable demands. We shall never be able to make poor teeth as good as the best, nor shall we ever become infallible in our judgment or perfect in our work. Most people understand this and judge us by a reasonable standard. But there are often good reasons why the profession does not command the highest confidence and respect. I attribute this lack of confidence to poor, unsatisfactory work.

I am asked, why does the practitioner fail often to do his duty?

First, I would say that the lack of first-rate preparation is one cause. I am glad that there is some prospect of raising our standard for license, but there is great need of holding firmly to our present standard until it is raised higher, especially in regard to the character of the men licensed. The fact that a patient's life is not so much in the hands of the dentist as is the case with the physician is no good reason why our standard should not be high.

Another and a very important cause of poor service is the rush of work. The patient in the chair is probably restless and anxious to be relieved. The dentist is pressed for time; other engagements are already upon him. He has probably found more work to do than he expected. Besides, he himself is anxious to complete his work and receive other patients.

The fascination of making money is also a strong force which causes the dentist to complete his work rapidly and often neglect some of the minor but essential details of the operation. The commercial taint has entered our ranks to such an extent that few realize the hold it has taken. It threatens to undermine the very foundation of our professional life. The true professional spirit detests such kinship to the dental parlor.

The meager equipment of many dentists often hampers them in performing their best service. In our cities where electricity, gas and water are available, many have advantages superior to those in smaller towns; and no dentist should fail to take advantage of the opportunities to equip himself the best possible. If we all cannot have at our service these forces in their various modes of application, we can equip ourselves with a large part of the most necessary appliances. This equipment will add not only to the efficiency of our service, and consequently enhance our reputation, both as individuals and as a profession, but it will facilitate our work and pay financially.

The last danger to good work to which I shall call your attention is the advantage the operator has over the patient in respect to the quality of his work. The operator is his own criterion; and he alone, for the time being, passes judgment upon his work. There is an old adage that says "It is human nature to take it easy when you can." And, since we are our own judges, and to a certain extent hidden behind the ignorance of the patient, there is often a great temptation to take advantage of our position and do a piece of work which would not stand the test of a high standard.

Far would I be from trying to arraign my profession, of which I justly feel proud, with any accusation of dealing unfairly with our patients; but I am merely pointing out some of the dangers that beset us and should be avoided.

I have spoken of some of the dangers that threaten good work, and the reflex influence of poor work upon the profession at large. I wish to call your attention to some of the reasons why we should insist

upon the best work possible. With the increase of greater confidence that would be consequent upon the best service, a more liberal patronage would come to the profession, and in many respects it would be more appreciative and satisfactory. We receive great appreciation from our patients, as a rule, and we should not fail to encourage this personal feeling between them and ourselves. This is one of the greatest joys of our work.

Besides, the consciousness of having given every man "a square deal" will add to one's self-respect, will permeate every phase of his mental activity, and will therefore go far to shape one's character.

It is said that ninety-five per cent of the people have defective teeth, and it is a well-established fact that the health of the person, and therefore his value to society, is largely determined by the condition of his teeth. When we stop to consider that upon the dental profession rests to some extent the responsibility of the health, the efficiency of service, and, in fact, very largely the success in general of our patients, we stand astounded at our opportunity and responsibility.

It is scarcely necessary for me to discuss at length any general methods by which our work as a profession might be improved. If we avoid the dangers to which I have already referred, we shall accomplish much.

Before leaving this part of my subject, there are a few points which I wish to emphasize. A man's reputation may suffer, temporarily, because he appears slow or seems to disregard the suffering of his patient. We cannot ignore the physical suffering of the patient or refuse to relieve her when it can be done at a reasonable cost of time and effort. But no dentist can afford to regard the unreasonable wishes of his patient and do an inferior piece of work in order to get through quickly. After all, he will be held strictly responsible for the durability of his work.

Another hindrance to a great many men in all professions is conceit. Many of us close the door of investigation too early in our professional life. Some fail to improve themselves because they do not regard the new theories and discoveries as practical or necessary; others feel that they are getting along very well and do not need additional information, while still another class is too busy or too indolent to investigate, and they conclude that what they do not know is not necessary and not worth the trouble of learning. The facts are, the recent discoveries in dentistry have revolutionized the work of the profession. Every year and almost every month brings some new discovery or method which none of us can afford to ignore. There is nothing that can compensate for one's own experience. I grant that much appears in our magazines that is spurious and altogether impracticable, but that does not prove that a great deal is not only valuable, but absolutely necessary to the progressive dentist. We should reject that which is evidently useless, and experiment with

that which appears to be good. Let us, therefore, as progressive men, be willing to accept new truth wherever it is found, and proceed to use it in every case practicable.

We should take the best magazines, attend our Society meetings, open our minds to convictions, and keep ourselves well informed. It is possible that the achievements in dentistry within the next quarter of a century will be beyond our expectations. Few of us take post-graduate work, and I see no other way by which we can keep informed than to use every opportunity about us to broaden our information.

I come now to the second main division of my subject, viz., the discussion of better prices. Perhaps we had better admit that we are living in an age unequal in its material prosperity. The vast and rapid accumulation of wealth has enabled many of us to secure better preparation for our work, more culture and a higher plane of living generally.

Prices vary according to the difficulty and amount of work. In all cases the dentist is the sole judge as to the amount of work done, and, of course, fixes his own prices. The patient realizes that he is at a disadvantage, because of his ignorance, and often feels that he has been overcharged. The facts are, we seldom charge enough. We do not deem it necessary nor feel disposed to make explanation or excuse for our charges, since the price of dental work cannot be regulated by the market. People generally never recognize the skill of the dentist. They know that he can make a plate and a bridge, but they do not stop to think what it has cost him to learn to do these things, nor do they consider that they require any extra skill or natural ability. If they secure the services of a lawyer for an hour or two, and he makes a liberal charge, they regard it as all right, but if a dentist should charge them proportionately to the lawyer they would think it extortionate, indeed. Already our profession is underpaid, and if we insist upon better work, there must be an increase in fees.

The prices of real estate, labor and everything have increased, and there is no good reason why the prices for dental services should not increase. There is a great need for some method by which the dentist who really does good work can be protected from the competition of those whose work is inferior and who have no ethical standard for their profession.

It is true, gentlemen of the Society, that what I have said applies especially to those dentists who are not members of this association. There are many good men who do not belong to this association and who are doing excellent work, but there is a great number of dentists with whom some authority should deal. They have no ethical standard for their profession; they advance and cut prices in order to get patronage, and then do poor work. They lower the dignity and reputation of the profession at large, and every dentist within the range of their influence must suffer for their conduct. A very incompetent man, supported by the reputation *you* have made as a dentist, may

deceive the people for quite a while and make a considerable sum of money out of his practise. On the other hand, every true, worthy dentist will have to suffer for the deceit and imposition of the incompetent practitioner.

I have simply pointed out that which is damaging our reputation. It is not within the range of this paper to suggest and discuss remedies. There is evidently much to be done, both in behalf of the laity and of the profession of dentistry. The situation is, indeed, a difficult one to deal with, and there is great need that we make wise decisions before organized and definite steps are taken. I can add only that there are many in our number who are anxious to see dentistry take a higher place as a profession, particularly in regard to the character of our men and the quality of our work, and to eliminate, as far as possible, the unworthy from our ranks.

The paper was discussed by Drs. Harris, Osborne, Jones, Betts, Fleming, A. H., Richardson, Cole, Bland and Everitt.

Report of Committee on Annual Essay was read and adopted:

We, the committee appointed to consider the annual essay, beg leave to report, after careful perusal of the same, that we find it replete with much matter that should be, and is, of much interest to every member of the profession. We congratulate the essayist on his successful effort to give us a paper worthy of the name of essay and worthy of the North Carolina Dental Society. We earnestly recommend that each member of the Society give the same his careful thought.

E. J. Tucker,
I. N. Carr,
J. M. Fleming.

Dr. A. H. Fleming introduced the following resolution, which was adopted:

Resolved, That the ethical dentists in the State inaugurate a fund to be used to purchase materials to be used in orphanages of the State, to the end of furthering better oral conditions, and that the men who will volunteer to assist in this work make it known to the secretary, and that the president appoint a committee of three to handle the fund and select from the volunteers the men to perform such services.

Dr. Everitt moved that a Legislative Committee be appointed to look into the question of the legal standing of dentists, especially as regards jury duty. Motion, after much discussion, passed.

On motion of the Executive Committee the Society went into the election of officers, with the following result:

President—Dr. J. R. Osborne, Shelby.

First Vice-President—Dr. F. L. Hunt, Asheville.

Second Vice-President—Dr. A. E. Frazier, High Point.

Secretary—Dr. C. A. Thompson, Wilson.

Treasurer—Dr. R. M. Morrow, Burlington.

Essayist—Dr. C. P. Norris, Lillington.

Members of Examining Board—Dr. V. E. Turner, Raleigh; Dr. R. H. Jones, Winston-Salem.

Place of Meeting—Wrightsville.

Time of Meeting left to Executive Committee.

The afternoon session was given up to clinics, and later Dr. Frazier made the following report of same:

Dr. R. E. Ware, Shelby, capped exposed nerve with Kellogg's Mummifying Paste," filling cavity immediately, first with very soft amalgam, then with pressure; filled body of cavity with rather dry amalgam.

Dr. R. G. Sherrill, Table Clinic.—Cast gold filling (restoration of mesial and distal surfaces of central incisor); well manipulated.

Dr. J. C. Osborne, Table Clinic.—Set up upper denture, using waxable rubber, combination of teeth with and without pins, palatal surface will come out very natural. One original point was the extending of the rubber down on necks of the bicuspids and molars; it is readily seen this will add much to the naturalness of dentures.

Dr. A. H. Fleming treated case of pyorrhœa alveolaris—Dr. B. F. Arrington's method—with much skill and thoroughness.

Dr. S. P. Hilliard, Contour Gold filling.—Quick separators and extension for prevention, made with diamond disk. Exceedingly well done was the operation throughout.

Dr. J. R. Osborne administered somnoforme, and Dr. G. B. Patterson extracted five teeth.

Dr. Sinclair made a cast filling, taking in grinding and approximal surfaces of second inferior bicuspid. Operation was skillfully done.

Dr. Lynch capped exposed nerve with mummifying paste (Johnson & Lung brand); then used soft amalgam, and with scarcely any pressure toward the nerve, filled cavity with harder amalgam.

Dr. Phin E. Horton demonstrated the curettement of an alveolar abscess on first superior bicuspid, using No. 2 surgical bur, and packed wound for drainage. It was very skillfully performed.

Dr. J. N. Johnson, Goldsboro, cliniced in porcelain, inserting a disto-approximal porcelain filling in a left central incisor. It was very skillfully executed.

On motion a vote of thanks was tendered Dr. Frazier for the able manner in which he had conducted the clinics.

Evening Session.

Report of Treasurer was read:

TREASURER'S REPORT.

1906.

June.	Amount on hand	$ 39.24	
	Received for membership	175.00	
	Received for dues	340.00	
	Received for reinstatement	24.00	
			$578.24

DISBURSEMENTS.

Paid Dr. V. E. Turner	$ 2.75	
I. R. Self	5.00	
Treasurer's bond	7.50	
Stenographer (at Waynesville)	30.00	
Dr. J. H. Wheeler (Edt. Prac. Soc.)	25.00	
Balance on note	90.00	
Interest on note	5.30	
Secretary's expenses	54.35	
Publishing Proceedings Society	154.00	
Secretary's salary	50.00	
Stenographer (H. P.)	40.00	
Treasurer's salary	25.00	
Treasurer's expenses	1.00	
		489.90
By balance on hand		$ 88.34

High Point, N. C., June 22, 1906.

R. M. Morrow, *Treasurer,*
Burlington, N. C.

Referred to Finance Committee, composed of Drs. F. S. Harris and C. A. Thompson, who reported the books correct.

The name of Dr. R. S. Booth was dropped from membership for non-payment of dues.

Dr. R. H. Jones made the following report from the Board of Dental Examiners:

LIST OF SUCCESSFUL APPLICANTS FOR DENTAL LICENSE.

1. F. B. Longan, Louisa, Va.
2. W. C. Fitzgerald, Chatham, Va.
3. L. V. Henderson, Houston, Va.
4. T. M. Hawkins, Sandy Ridge, N. C.
5. J. H. Austin, Clayton, N. C.
6. H. V. Price, Price, N. C.
7. R. F. Waller, Republican Grove, Va.
8. L. R. Gorham, Rocky Mount, N. C.
9. E. H. Broughton, Raleigh, N. C.
10. G. W. Feagin, Albemarle, N. C.
11. J. A. Young, Fallston, N. C.
12. I. R. Self, Lincolnton, N. C.
13. C. L. Dickens, Houston, Va.
14. E. S. Green, Louisburg, N. C.
15. J. U. Gettys, Forest City, N. C.
16. R. F. Graham, Rowland, N. C.
17. C. D. Rozzelle, Mount Holly, N. C.
18. D. W. Parrott, Kinston, N. C.
19. G. E. Weeks, Epworth, N. C.
20. J. R. Meador, Reidsville, N. C.
21. I. L. Hauss, Rose Hill, N. C.
22. J. W. Powell, Whitesville, N. C.
23. C. D. Baird, Franklin, N. C.
24. R. H. Phipps, Ayden, N. C.
25. H. F. Baity, North Wilkesboro, N. C.
26. G. E. Dennis, Iaegar, W. Va.
27. C. O. Lee, Winston-Salem, N. C.

A Legislative Committee, consisting of Drs. J. M. Fleming, L. M. Humphrey and H. D. Harper, Sr., was appointed.

Resolutions of thanks to the railroads, manufacturing club, school board, hotels and local dentists were presented and adopted.

On motion of Dr. Griffith a vote of thanks was extended to Dr. J. C. Watkins, the retiring Secretary, for his work in getting up so successful a meeting.

Dr. Everitt moved that the Treasurer be instructed, if needed, to borrow as much as $300.00 to further the work of the Prosecuting Committee. Motion was carried.

Dr. A. H. Fleming asked contributions to further the work of looking after the teeth of the children of the orphanages of the State, and $27.10 was contributed, Drs. Wyche, Gorman and Patterson to have charge of all contributions.

On motion the janitor was allowed $5.00 for his services.

The new officers were then installed as elected, and the President, Dr. Osborne, appointed the following Committees:

Executive—Everitt, Betts, Tucker.

Ethics—Turner, V. E., Harper, H. D., Sr., Jones, R. H.

Committee on Membership—F. S. Harris.

Prosecuting Committee—J. M. Fleming.

Society then adjourned *sine die*.

New members elected at High Point in 1906:

E. H. Broughton
J. H. Gettys
J. L. Gibson
L. R. Gorham
G. F. Herring
I. R. Self
C. S. Sloan
Jos. A. Young
C. D. Baird
H. R. Cromartie
R. F. Graham
W. L. Hand
J. R. Highsmith
C. A. Little
C. E. McManus
D. S. Ray
W. A. Taylor
Geo. M. Feagin
D. W. Parrot
F. G. Chamblee
H. B. Gibson
E. S. Green, Jr.
D. N. Hicks
W. K. Hartsell
D. K. Lockhart
Jas. W. Powell
R. W. Stevens
W. A. White
C. D. Rozzelle
J. H. Newberry
L. T. Smith
B. R. Long
Chancy Highsmith
Chas. T. Lipscomb
R. P. Anderson
J. L. Keerans

Thirty-Third Annual Session

OF THE

North Carolina Dental Society

HELD AT

Morehead City, N. C.
June 26-29, 1907

The thirty-third annual session of the North Carolina Dental Society was held in Morehead City, N. C., June 26-29, 1907.

In the absence of the President, Dr. J. R. Osborne, the meeting was called to order by Dr. F. L. Hunt, First Vice-President.

Prayer was offered by Rev. R. D. Cross, of the Baptist Church.

The roll was called by the Secretary, Dr. C. A. Thompson, and the minutes of the last meeting were read and approved.

The annual essay was read by Dr. Carl P. Norris, as follows:

TRUE SUCCESS IN DENTISTRY.

Dr. Carl P. Norris.

With the present day's rush of young men into every kind of business, for the sake of the money to be obtained therefrom, it may be well for the dental profession to pause a moment to consider who are to be the future standard-bearers of their high calling. When we look around us and see missing from our ranks many strong men, who but a short time ago occupied prominent and influential positions in our Society and profession, we sometimes wonder, will not the lucra-

tive allurements of business life deprive dentistry of men who could and would otherwise raise its standard higher in the estimation of the people, and will not this turning of the tide cause incompetent men to force their way into the ranks solely for the sake of their own selves, and thus cause a blot upon the profession? But what is the remedy for this? Will charging higher prices change the course of affairs and alleviate the evil tendency? No. We must strike at a deeper and more vital point. We must first teach young men what true success really is.

Were we to inquire of different persons the meaning of the word, each would give a different answer; one would say it is accumulation of money; another, religious zeal; still another will say it is education in science, art or literature; another, possibly, that cheerfulness and enthusiasm constitute true success.

All of these are partially correct, but it is safer and better to use a broader term—one that will strike at the heart of the word. We can safely say, without being contradicted, that true success in dentistry, as well as in any other profession or in any business, is the fulfilment of our desires and aims; provided, however, that the fulfilment is a benefit both to ourselves and to those with whom we come in contact. In order to attain this success, many duties devolve upon the practitioner. Of the many, we desire to briefly enumerate a few.

The duty we owe to our Society. We cannot be too loyal to it. We should be proud of it and honor it by our presence. It has been a nucleus of education, from which has radiated honor, distinction and beneficence. It is through these associations that we have efficient and ethical members of our State boards, and these boards have stimulated the dental colleges to a higher ideal and have run the purchasing diploma concerns out of business. We should look forward to our annual meeting with pleasure, as a great summer dental school, where we exchange methods and ideas freely.

I am exceedingly sorry to say that there are many good dentists in our Old North State who are not members of this organization. This Society, to fulfill its objects, needs the support of every ethical dentist in the State, and it is our duty to work toward bringing more of them, and if possible, every one of them, into it. Let us never become offended simply for the reason that some of its proceedings do not exactly conform to our individual wishes.

Disloyalty on the part of members of the Society is neither becoming nor does it reflect credit upon them. If we are wise enough to perceive the shortcomings of the convention, let us give better proof of our ability by taking a hand and helping to make it what we think it ought to be.

Every truly ethical dentist is duty-bound to his professional brother and should be forever on his guard, using every artful tact to shield his reputation whenever his skill or the honesty of his purpose has been questioned or assailed by an irate patient. We must at all times

bear in mind that it matters not how unskilled a piece of work coming under our supervision may appear from its present condition, at some time during our career we have had the misfortune to send from our hands and our offices work that was equally as bad, if not worse.

Therefore, remember that if we fail to observe our ethics, and, through thoughtlessness, malice aforethought, or otherwise, criticise our brother harshly, the time will surely come when the same opportunity will come to him, and the science of ethics and the milk of human kindness must be indeed deeply rooted in his soul if he declines to avail himself of this splendid opportunity.

It is our bounden duty to keep strict guard over our feelings and be very sure to mediate carefully and conscientiously, lest some petty professional jealousy, some lurking brutality, should cause some concealed criticism to find lodgement in our breast, against the success of our brother. Too often it is the case. With Burns we mourn:

"That man whose heaven-erected face
The smiles of love adorn,
Man's inhumanity to man
Makes countless thousands mourn."

We should always be mindful of our duty to our patients. Study their needs. Be honest, candid and attentive. Everything should be done to convince our patients that the care of the oral cavity is absolutely necessary to the conservation of health.

Civilized people remove the accumulations of waste and foreign *debris* from other portions of the body, but often neglect so important a part as the mouth.

It is our duty to place the mouth in an aseptic condition by our operative skill and mechanism, aided by such antiseptics and germicides as our knowledge of therapeutics and bacteriology may suggest, instructing the patient as to the future care of the teeth.

We should always strive to do our best when performing any service, be it ever so small. It is said that our character is written in our work.

Dentists can and ought to be greater benefactors, when we note the fact that fifty per cent of all diseases are directly traceable to defective teeth or a failure to rightly use them; and by noting that ninety-five per cent of the entire population have defective teeth, we readily see that the public offers the dentist abundant opportunity to become its benefactor in helping to fortify his brother against disease, and thereby lengthen the period of human life.

Our example before the world should be such as to win for us respect and influence in our community; and never let us act in such manner as would tend to bring reproach upon ourselves and the honorable profession which we represent.

Each individual is engraving his own monument. Let each one live a life worthy of praise, and our monument will be unveiled with a clear inscription of the power we have maintained.

"The sweetest lives of those to duty wed,
Whose deeds, both great and small,
Are close-knit strands of an unbroken thread,
Where love ennobles all.
The world may sound no trumpets, ring no bells;
The Book of Life the shining record tells."

The essay was referred to a committee consisting of Drs. Tucker, Spurgeon and Johnson.

On recommendation of the Executive Committee Dr. A. H. Fleming was restored from honorary to active membership, he having returned to the State A similar course was taken as to Dr. Reese, he being reinstated on payment of lapsed dues.

Society then adjourned.

Morning Session.

The committee appointed to purchase chairs for the use of the Association reported that four chairs had been purchased for $69.95, and the Treasurer was ordered to pay that amount.

The Committee on Dental Ethics reported that only one case of the violation of the Code had been reported to the committee during the year, that being the case of Dr. E. H. Broughton, of Raleigh; and, on the recommendation of the committee, he was expelled from membership in the Society.

Dr. C. A. Bland, representing the Jamestown dental meeting, presented the claims of that organization, and after full discussion by quite a number, a motion prevailed to appropriate $100.00 from the Society to that meeting. Many individual members also joined the Jamestown organization, paying the fee of $5.00 for membership in same.

The Committee on Legislation presented the following report:

REPORT OF COMMITTEE ON LEGISLATION.

Your Committee on Legislation begs leave to report as follows:

We had a meeting in Raleigh early in December, Davis and Fleming being present, Davis having been appointed in place of Dr. H. D. Harper, Sr.

After discussing the subject fully, we decided that it would be best to employ a lawyer, in order that whatever legislation we undertook might be in legal form.

We decided first to have printed the law which we wished passed, and enclose copies to all members of the Society, asking them to see in person or write to their representatives. We did that, and out of a membership of about 185 at least ninety answered and gave us much-needed support.

After we had gotten a favorable report from the Senate committee, our troubles began. The medical fraternity, which had at least five members in the House, objected to the wording of our bill, claiming that it gave us the right to practise any form of surgery, from appendicitis to extracting teeth; and, although we assured them that such was not our purpose, we thought it best to eliminate anything that might seem objectionable, rather than risk their antagonism in the House, where the so-called "senatorial courtesy" counts for so much.

We did that, and yet we think that our bill, as finally passed, is much stronger than the one we began with, and our lawyer says that it meets our every requirement, while at the same time everything has been eliminated that might seem the least objectionable to the medical profession.

The following is our bill as passed: Subsection "six" was added to section 44700 (a), chapter 95 of the Revisal, relating to dentistry, the new subsection being as follows:

"A duly licensed dentist, under chapter 95 of the Revisal, is a surgeon limiting his practise to diseases of the teeth and such other diseases of the adjacent parts as may be dependent upon or associated with said diseases of the teeth, and who shall have the same right to prescribe drugs or medicines or perform such surgical operations as may be necessary to the proper treatment of the special class of diseases mentioned in this section as is now enjoyed by registered physicians."

Of course, there are many points that might have been raised as to what legislation was most needed, but the committee decided to bend our energies to the passage of a bill which would excuse us from war and jury duty, and which would cause our prescriptions to be honored the same as a physician's; in fact, a bill which would put us on the same footing, before the law, as the physician, and this bill does it.

As it was before, a druggist was liable to indictment if he sold us anything more than he would sell to the general public; but as it is

now, we can prescribe anything that pertains to our work. We never have desired to prescribe anything else.

We also had inserted the following clause, relating to illegal practise:

Section 3642 of the Revisal was amended by adding after the word "dollars," in line four, the words "Provided, that if any person shall, after having been once convicted of practising dentistry contrary to the provision of section 3642, practise dentistry in violation of the provisions of section 3642, upon conviction thereof for the second offense, and each succeeding offense, he shall be guilty of a misdemeanor and shall be fined and imprisoned in the discretion of the court."

As was said, we have had the active help of as many as half the members of the Society. We feel almost like reading their names as an honor roll. We never could have accomplished anything without their help. Only one man refused his help, giving as his reason that it would open up opportunity to unprincipled men to prescribe whiskey.

We wish to add, looking to future legislation, that the great need of the hour, for North Carolina dentistry, is representation in the Legislature of the State. We do not mean that there should be an unseemly scramble for the nomination, but *sometimes* the office seeks the man. At least as many as two of our best members could have had the nomination a year ago if they could have made the sacrifice, and we wish to urge that in the future the need of dentistry should cause some one to make the sacrifice needed and give us representation in that body.

Respectfully submitted,

I. H. DAVIS.
J. M. FLEMING,
Committee.

On motion the report was accepted, and a vote of thanks tendered the committee, and the expense account of the committee was ordered paid.

In the absence of Dr. J. D. Carlton, a paper prepared by him was read by the Secretary as follows:

CROWN AND BRIDGE WORK.

DR. J. D. CARLTON. SALISBURY. N. C.

This very important subject which has been assigned to me has been so thoroughly covered that at this day little that is new remains to be said.

The improvements made in crown and bridge work during the past twenty-five years have aroused an enthusiasm in prosthetic dentistry

which has resulted in placing the profession on a higher plane. With the superior advantages now to be derived from any first-class dental school or university, there is no reason why the young graduate, as he emerges from the portals of his *alma mater*, should not be thoroughly equipped in the prosthetic profession, especially as regards the different methods of crown and bridge work.

Prosthesis is defined as "the addition of an artificial part to supply a defect," and as applied in dentistry its votaries are required to possess and exercise a degree of skill not demanded of those who would supply deficiencies in other regions of the body. As our work is almost wholly mechanical, we should be thoroughly imbued with and governed by correct mechanical principles. Another factor of equal importance is the possession of the artistic skill, by which we may be enabled to approximate nature's inimitable example. We are not all born with mechanical skill and artistic tastes, but these may be acquired to a great degree if our training be properly directed. To still further raise the status of this branch of dentistry, more attention should be given to manual training. Moulding, crowning and handling tools are what we need in order to train the eyes and fingers.

I am right in saying that too many of the profession depend upon the dental laboratories to do their work, with results that are disastrous to themselves, to their patients and to the profession. If we are to attain skill in this branch, it will be only by study and diligent practise. We must become familiar with the different methods and forms of crowns and bridges, and study the relationship of the several anatomical structures. Failures in this work can be attributed to lack of knowledge of the fundamental requirements of construction. The foundation is the first important step, and must be considered from a mechanical and artistic standpoint; the occlusion and facial expression should next be considered, and then we will be ready to determine what kind of a crown or bridge is indicated.

There are many teeth that are improperly prepared for the reception of crowns, and there are many dentists who believe it almost criminal to devitalize pulps that can be properly prepared for shell crowns. My experience with such methods of practise has caused me to believe that most teeth of normal shape with vital pulps cannot be properly prepared for the reception of crowns unless the pulps have been removed. The sensitiveness of vital teeth precludes the requisite amount of grinding for their proper preparation for shell crowns. If the function of the pulp is to develop the dentine, and if its function practically ceases when the tooth is developed, then it is of little value to the tooth to be crowned. If the pulp is removed and the canal properly filled, the life of the bridge will properly be increased, for the tooth root receives nourishment from two sources—through the pulp canal and through the pericementum. If the source of nourishment through the pulp is removed, it requires increased activity of the pericementum to furnish nourishment. This increased activity

seems to act as a mild stimulus to the pericementum and enables it to withstand the additional work to which it is subjected when the tooth which it surrounds acts as an abutment for a bridge.

If ill-fitting ferrules are not a source of irritation to the gingival border, why should writers on operative dentistry impress upon us the necessity of thoroughly finishing all fillings at the gingival border in order to prevent overhanging margins from irritating this border and cause recurrence of decay? But we have been adjusting crowns for years with greater marginal area, which gives a larger shoulder to irritate the gum. It is really surprising that our failures have been so few. All must admit that ill-fitting crowns have been responsible for the loss of many teeth, for it is almost impossible to prepare a tooth and construct a ferrule so that it fits the tooth perfectly. Too many dentists permit the ferrules to impinge upon the pericementum, and this greatly increases the irritation at the gingival margin.

For the eight anterior teeth, porcelain crowns are always indicated, not only because of their artistic appearance imitating nature, but also because I contend that they fulfill the requirements of strength and durability. Unquestionably they are cleaner than the Richmond crown. I deem it unnecessary, however, to use bands when crowning single teeth. The bands will not prevent a root from splitting, and a perfect joint may be made between the crown and root, as follows: After the root has been prepared and the crown ground to fit as well as possible, soften a piece of gutta-percha stopping, place on the end of crown with pin in position and press firmly to place on the root. When the stopping is hard, remove the crown and carefully trim the excess gutta-percha even with the outside circumference of the crown. The crown is now cemented to place, and it will be found that the cement will be a long time dissolving out. This makes a beautiful, natural-looking crown.

Bridge work is the natural outgrowth of crown work, and marks the greatest advance in prosthetic dentistry. Technical skill is required for its construction, and good judgment to determine its admissibility. There are entire text-books devoted to this important subject. The object at which we aim in this work is utility and æsthetic appearance. In determining the indication of the case and methods of construction, there should be no place for guesswork. A reasonable degree of familiarity with the laws of physics is a desideratum to the end that we may calculate the leverages exerted and determine the direction of the forces applied. We should thoroughly familiarize ourselves with the working capabilities of metals used. We should know their limitation and what we may expect to accomplish with them.

For the benefit of beginners I will say that whatever success I may have had with this class of work was due to unremitting practise and a determination to become a master of the metals and materials with which I had to deal. We should keep in mind the laws applying to

force, and consider the forces of mastication as they are related to individual cases. We should remember that in shaping the abutments they should be formed so that they will stand perfectly parallel to each other. We should study every little detail as a matter of routine, to the end that our judgment may be sustained and success crown our efforts; and let this be our motto—not how cheap, but how good. It is true that the most varied and complicated cases present themselves to us in practise—cases that no one method will cover, and in the solution of which we are called upon to exercise our inventive talent to the utmost.

The paper was discussed by Drs. Harris, Johnson, Everitt, Frazier, Turner, Ray, Betts, Fleming, A. H., Matthews, Alexander, Carlton, J. W.

A paper was read by Dr. J. R. Edmundson as follows:

OPERATIVE DENTISTRY.

Dr. J. R. Edmundson.

The subject assigned me is one of such broad range that I shall not attempt to deal with it in full, but will only consider a few points with which the majority of us have to deal daily.

The first thought that comes into my mind when I begin to *try* to prepare a paper on any of the various subjects pertaining to our profession is, how unnecessary all this work if we could only make people keep clean mouths; and I sometimes wonder if we haven't got the cart before the horse, anyway. Aren't we talking and writing too much about filling and extracting teeth, crown and bridge work, etc., and too little about doing away with the causes which bring about the need of such things? It seems too much our object to repair the loss which has already occurred, rather than to prevent the recurrence of such loss. If there is one subject with which we, as dentists, have to deal that is nearer my heart than another, that subject is prophylaxis, and I wish to consider this first of all, for I really believe it should have first place in every paper on every subject.

When a patient comes to us for treatment, our first duty is to cleanse his or her mouth; and let me say right here that often a mouth at first sight has the appearance of being in a healthy condition, but if you take your scalers and go just under the free margin of the gum around each tooth, you will find some tartar, which will, if neglected, lead on to serious trouble. For the removal of this deposit I know of no set of instruments that compares to the "Arrington" scalers, for pyorrhœa treatment. Did it ever occur to you how few people know how to brush their teeth? I dare say there is not one in a dozen.

It is our duty to have a brush on hand, and when we have put a

mouth in good fix, to teach the patient how to use the brush, and impress upon him the importance of regularly caring for his teeth after meals. If there is any class of men who ought to *talk*, it is the dentists. If we know anything about the mouth and teeth, it is our duty to teach our patients; if not, we should quit practising. A great many teeth are lost because of the ignorance of patients as to how to cleanse them, and we are responsible for it. Some may say it seems to do so little good to talk to and advise patients about cleansing their teeth. Yes, it is true that a great many seed will "fall upon the wayside, but if we keep preaching, *some* seed will strike good ground and spring up and bear fruit"; so let us not be discouraged, but *talk*.

To an honest, conscientious dentist it is a most sad sight to look into the mouths of the children of this age and see there the filthy, unkept mouths, with decayed and abscessed teeth. It is enough to make us blush with shame. (Let me ask, just here, where is the textbook we were going to get into the public schools of our State? Isn't it time we were putting into execution some of these plans?)

I think all of us are too prone to tell of our success and not our failures; so I shall discuss briefly as the second subdivision of this paper the treatment of pulpless teeth. Just here is where we all fail, and more often, I fear, than we should; and I truly believe a great many of these failures are due to our not charging enough for this work to justify us in taking more time. We are in too big a hurry to get through the case in hand, because we know we are not getting much for the work done. There is but one way to remedy this, and that is to *charge*. I believe it is nothing more than justice to ourselves and patients to do this; and if we are not going to do it, I think it best for us to sacrifice the tooth at once and relieve the patient of the expense and ourselves the shame and humiliation of having failed.

The most necessary thing, and the greatest time-saver in the successful treatment of dead teeth, is the rubber dam, and I don't think any man can save these teeth for any great length of time who does not use it. You may say that you save such and such a per cent of the teeth you treat, but some other man can tell you more about that than you think, for you don't always extract them. Germs can't thrive where there is perfect dryness, and you can't get perfect dryness unless you use the dam. The first step after adjusting the dam should be to dry pulp chamber with hot air, and then with broach tease out the dry *debris* as you go, and don't try to see how far you can pass broach at once, but cleanse as you go. After all foreign matter has been removed, the next step is to medicate with some diffusible antiseptic, seal with gutta-percha and leave for a few days. Do not be in too big a hurry to fill canals, for it is better to wait long enough than to have to go into them again.

The materials with which different dentists fill root canals are too numerous to mention. For canals that are straight and easy to fill, I don't think there is anything better than gutta-percha points. Fill-

ing with cotton is certainly not very scientific, but in cases where the canals are inaccessible I don't hesitate to do it, after saturating the cotton in oxpara, and I believe that I'm doing the very best thing for the case in hand. Some may differ with me, but under no circumstances would I ever fill a canal with cement, and I hope the fellow who does will always have these teeth to deal with.

The third and last part of this paper I wish to devote to the separation of teeth, preparation of cavities and insertion of amalgam fillings. I believe the principle reason of the failure of so many fillings, both gold and amalgam, is due to not taking time to properly separate teeth and prepare cavities. Just here is where the rubber dam is again very necessary. You may be very careful in the preparation of a cavity and think you have it all right, but if you will adjust the dam and thoroughly dry the parts you will almost invariably find a little more work necessary before inserting the filling.

For the separation of teeth I find cotton preferable. It is impossible to get the necessary separation with a mechanical separator without injury to the surrounding tissues. If patients will not allow you time to separate the teeth well, let them go to some one who will do "most any old way," and it will not be more than two or three years before you may expect to have them as patients again, and this time they will be ready to take your advice.

Now, just a few words on amalgam work. I don't think I would be far from correct were I to say ninety-five per cent of us work amalgam almost every day in our practise, and yet it is the most abused filling material we have. Why is this? There certainly *must* be and *is* a cause for this. I, for one, believe amalgam is a great blessing, not only to patients, but to dentists as well. I sometimes read in the dental journals where some fellow says amalgam has no place in his practise, and that all who use it are little short of criminals; and it at first makes me feel a little ashamed of myself; then, when I look into my own mouth and see there the finger prints of my good friend, Dr. Everitt, in the shape of two amalgam fillings, put there sixteen years ago and still doing good service, I begin to feel that, after all, I'm still right when I say that amalgam is a good filling material and that it will save teeth. The fault lies not in amalgam, but in the way it is worked. If you are as careful in preparing your cavities for amalgam as for gold, work the amalgam dry, afterwards absorbing all surplus mercury from surface of filling, then polish, after filling is hard, you will have a durable filling.

If I have caused one man to resolve to do better work in amalgam and in the treatment of dead teeth, I shall not feel I have written this paper in vain.

The paper was discussed by Drs. Spurgeon, Johnson, Everitt, Jones, Livermon, Turner, Reese, Bland, James, Ray, Dameron, Crenshaw, Alexander, Edmundson.

Afternoon Session.

Dr. R. M. Squires read the following paper:

WHAT WE SOMETIMES FORGET.

Dr. R. M. Squires.

It is not the object of this paper to explore new fields or to discuss new theories in the science of chemistry and metallurgy, but, as the title suggests, to call attention in a general way to some of the points which most concern us in the dental profession.

We cannot reason the facts of chemistry. Why certain elements unite and form an entirely different substance is yet beyond the human ken. Our Greek philosophers could never be chemists, because they would not accept a belief they could not analyze. Chemical action has no why. It is as mysterious as was the little flower to Longfellow, when he said:

"Little flower in crannied wall,
I pluck you from the crannies and hold you in my hand,
Root and all.
If I could know you, root and all—
All and in all—
Then I would know God and man."

Chemistry underlies the existence of man. Earth, the great laboratory, prepares the food for the plant and animal world—sustains the life; after death takes back her gifts, resolves them to dust and minerals again, surrendering up their individual beings to mix with the elements and be a brother to the insensible rock and sluggish clod. Thus have the poets sung and the scientists taught throughout the ages; but the question that concerns us most to-day as practitioners is not so much the musings of the poets or the speculations of the scientists, but to keep in mind the chemical and metallurgical facts that have been proven and found to be truths.

Problems arise daily. No two operations are exactly alike. New symptoms are constantly presenting themselves. We must be able to meet these and stay their destroying effects. Results are inevitable; causes may be treated and losses replaced. Discoloration of the teeth, erosion of the teeth, altered chemistry of the saliva, are among the most frequent problems. The altered chemistry of the saliva presents many possibilities from an etiological standpoint. Many forms of lesion of the mucous membrane of the nose, nasopharyngeal walls, larynx, mouth and gums, as well as disease of the stomach and intestines, may be brought about by the altered chemistry of the saliva. Even the decay of the teeth is produced by the chemical change of certain elements taken into the mouth.

The dentist is not so much concerned with the extraction of the metals from the ores, but he should have a clear conception of the refining process and the many changes through which the metals pass, in order that he may know when they have reached a state of purity. The manipulation of these metals in the practise of dentistry is of vital importance to our profession. We sometimes forget to have the metals absolutely cleaned from all oxides and foreign substances before trying to solder them. Sometimes we forget the pickle and let the acid become diluted by moisture until it will not clean the metal. To avoid unsuccessful soldering, the case should be nearly hot enough to flow the solder before turning flame into the solder. Instead of trying to draw solder from one location to another, it would perhaps be better to add a new solder and dress off.

The process of annealing gold is of great importance, the minutia of which is sometimes overlooked. The gold is heated to cherry red, as you all know, and dipped into cold water. If the heating should continue to a white heat, cracking or breaking would be the result in swaging.

In this paper there has been no attempt to produce any new theory, but simply to call to mind one or two facts that might be forgotten, and to deepen impressions made in former study. Let research and investigation be our motto until we become real masters.

The paper was discussed by Drs. Spurgeon, James, Betts, Richardson and Squires.

Dr. W. B. Ramsay being absent, a paper prepared by him was read by Dr. Harris as follows:

HOW ARE WE TO MAKE THE MEMBERS OF THE DENTAL PROFESSION OBSERVE THE LAWS OF ETHICS?

Dr. W. B. Ramsay.

I proceed in the preparation of this paper by again asking the question, "How are we to do it?" Not by trying to make something out of nothing; for if you would produce a good article, there must be good material to begin with; otherwise the whole fabric is a failure. You cannot make a silk purse out of a sow's ear; neither can you make a dignified, self-respecting and respectable man out of one who has the characteristics of a swine implanted and bred in him.

This question of ethics is a principle that is practised by many of mankind every day and all the time, both in and out of the great professions, and is at the same time disregarded by a great multitude in every walk of life. "As a man thinketh in his heart, so is he." Only that man who has the proper regard for justice and righteousness can be depended upon to carry out (none of us do it perfectly) that great

and blessed principle laid down by the lowly Nazarene—"Do unto others as you would have them do unto you"; and, after all, this is the kernel of the whole matter; it is the power that controls. We are either selfish or unselfish, and just as we are dominated by one or the other will our conduct be toward our fellow-men.

You cannot, by law, make men good, honest or considerate of the rights of others, only in so far as it may awaken in them a fear of the results of evil-doing. I have no war to make against the laws of ethics; they are all right, for if there were no law there would be no transgression; but I take the position that we should use the ounce of prevention rather than the pound of cure—that we should endeavor to keep the source pure rather than waste too much time with the stream. I do not propose to lay upon this Society, or any other one, the burden of keeping every dishonest and unethical man out of the profession or instilling into every one the desired characteristics; for this is impossible, for as long as the prince of darkness walks up and down in this old earth we are going to have them with us. But it is my opinion that the conditions can be greatly improved by making the requirements greater. Such a course would cause many a one to stop and consider well before taking the step, and would result in greater proficiency in those who did. I firmly believe, sirs, that the rank and file of unethical men in the profession to-day are of that type who did not take the time or had not the inclination to analyze themselves or the field before them, but blindly launched out into an unknown sea, prompted by mercenary motives only, and, when it was too late, they discovered that "All is not gold that glitters." Their own unfitness and inability to cope with men of better parts spurred them on to underhanded and unprofessional methods. To keep the profession at low tide as to such men, I know of no factor so powerful as that of a higher education. Make the standard of educated dentistry of such a character that the underling would stand aghast and the man with loftier ideas and aspirations would be helped upward according to his desires. I almost agree with some of the thinkers of the present day in that of abolishing the degree of D. D. S. and requiring every one to take the degree of M. D., with dentistry as a specialty. Certainly dentistry, under such conditions, would be more consistently a specialty in medicine than we can claim for it under present conditions. I have come to the point in my life where I do know that it would make better dentists of us all to know medicine and the public would trust us further; and, while *we* are studying medicine, I propose to have the physician *study* dentistry; 'twould help him—this I know, too. To create such a course would bring about a revolution in our dental schools, but not necessarily their abolition. I am almost persuaded that it should be done.

The paper was discussed by Drs. Harris and Betts.

A paper by Dr. Joel Whitaker was then read as follows:

THE ANTRUM OF HIGHMORE, ITS DISEASES AND THEIR TREATMENT.

Joel Whitaker, M. D., D. D. S.

This maxillary sinus derived its name of "Antrum of Highmore" from Nathaniel Highmore, who described it and reported a case of suppuration in 1651. There were several men, though, who had previously reported cases of suppuration and had advanced theories as to its function.

I am first going to run over the anatomy of the maxillary sinus and give its most important relations, and then shall say what I know of its diseases which most intimately concern the dental profession.

The Antrum of Highmore is the largest of all the nasal sinuses, is pyramidal in shape and situated on the body of the superior maxillary bone. The superior wall of the antrum is the floor of the orbit. Running in a canal in the superior wall, and separated from the antrum by a very thing bone partition, is the infra orbital nerve and artery, which pass forward and out upon the face through the infra-orbital foramen.

The *posterior wall* is roughened and quadrilateral. Behind the posterior wall lies the internal maxillary artery.

The *anterior surface* is bounded above by the infra-orbital ridge, and below by the alveolar process. Just below the infra-orbital ridge is the infra-orbital foramen, through which pass the infra-orbital nerve and artery. Running up from the canine tooth is the canine ridge, and just behind this is the canine fossa.

The *inner wall* is the thinnest of all, and separates the antrum from the nose. On the antral side of the inner wall is a ridge which runs from the upper anterior angle backward and downward. This ridge marks the course of the lachrymal canal. Behind this ridge is a large heart-shaped opening, which is the normal opening between the antrum and the nose. In the living being this opening is greatly diminished in size by the inferior turbinate bone, mucous membrane and fibrous membrane.

The inferior turbinate bone crosses the lower one-third of the opening and sends a thin plate of bone downward to close the lower portion, and another thin plate of bone—the processus uncinatus—upward to partially close the upper portion.

Attached to the upper border of the natural opening and to the posterior border of the processus uncinatus is a thin membrane, which forms a little trough-like depression, called the hiatus semilunaris. At the upper end of the hiatus semilunaris is the opening from the frontal sinus, and at the lower end is the opening of the maxillary

sinus. So it is easy to see how the antrum could be infected from the frontal sinus, were it diseased.

The floor of the antrum is formed by the alveolar process and is usually about on a level with the floor of the nose. Should the floor of the antrum be higher than the floor of the nose, it is apt to be thick and cancelous. Should it be on a level with the floor of the nose, it will be apt to be marked by protuberances caused by the roots of the teeth. If the floor of the antrum is below the floor of the nose, it will quite likely have projecting into it roots of the second bicuspid and first molar teeth, covered only by periosteum, peridental membrane and mucous membrane. Occasionally there will be a superior dental nerve, which is separated from the antrum by mucous membrane only.

The antrum is lined with mucous membrane very similar to that of the nose.

Diseases.

As to diseases of the antrum, I will consider only acute and chronic empyema. Acute empyema of the antrum is also called acute purulent inflammation, or abscess of the antrum.

The predisposing causes are a catarrhal condition, either acute or chronic, of the mucous membrane of the antrum extending into it from the nose, or caused by disease, as la grippe, scarlet fever, etc., the resisting power of the patient, and lowered vitality, as by drug habit, and the variations of the anatomical formation of each individual antrum. When there is a catarrhal condition in the antrum, there is always some fluid which remains to enhance the action of the micro-organisms, or to become itself first infected.

The exciting cause is always a micro-organism, which in seventy per cent of the cases gain entrance through the alveolar process from the purulent pulp of a first molar or second bicuspid tooth. The antrum can also become infected through an abnormal opening between it and another nasal sinus. The normal opening of the frontal sinus is at the upper end of the hiatus semilunaris, and the normal opening of the antrum is at the lower posterior end; so, should the frontal sinus be diseased, the pus and secretion drain out easily and some is apt to enter and infect the antrum. The condition can also be caused by forcing some foreign particles through the roots of the teeth into the antrum, or by forcing the root of a broken-down tooth in an attempt at extraction.

Pathologically, you will find the mucous membrane greatly thickened—sometimes six or eight times thicker than normal.

Subjective symptoms are: pain, which may be acute and localized at the points of the distribution of the superior dental nerve, or infra-orbital nerve, or dull, heavy pain indefinitely located, tenderness upon pressure, especially noticed upon closing the teeth, or pressure upon the canine fossa. There is occasionally noticed a chill, followed by rise of temperature.

Objective symptoms are: swelling, increased inflammation, which may have extended to the soft tissue, causing the cheek to swell so as sometimes to almost close the eye; discoloration beneath the lower lid of the eye, the thin inner antral wall bulging toward the septum of the nose. Should there be a sinus leading to the antrum, you will find pus coming through it, or by probing through the root of a tooth leading to the antrum. By looking into the nose you can also often see pus, which you would judge, by its location, came through the natural opening.

The diagnosis is made comparatively easy by the subjective and objective symptoms, combined with the exploratory lamp, probe and examination of the teeth. To use the exploratory lamp to advantage, the darker you have the room the better. If you do not have a dark room you could take the patient at night. Have the patient close the lips tightly around the handle of the lamp, and if there is anything in the antrum there will be a considerable difference in the illumination of the two cheeks, unless both antra are involved.

The prognosis: If untreated, the pus will work toward the point of least resistance and is apt to make an opening through the alveolar process, canine fossa, or into the nose. This opening will have a tendency to fill with granular tissue, but will be apt to remain as long as there is suppuration. The acute purulent inflammation, if untreated, is apt to become chronic, causing sloughing of the mucous membrane and the periosteum, exposing the bone, which will, of course, necrose after the periosteum is gone.

Treatment: First, find and remove the cause, and then give the common-sense treatment of an abscess, which is to keep it open and keep it clean. As seventy per cent of the cases are caused by a purulent condition of the pulp of either the second bicuspid or the first molar teeth, you would first examine these teeth, and if either is the cause of the trouble it is usually best to extract that tooth and make a point of entrance there into the antrum, which can easily be done by enlarging the opening with an excavator. Through this opening you can syringe the antrum with warm water, to which a little borax, salt or glycothymoline has been added to make it akaline. After thoroughly syringing it, it is a good idea to pass some hydrogen peroxide into the cavity, as most of the pus has been removed, and this will reach the little which remains in the inaccessible parts of the cavity. After a few minutes, pass another syringe full of water to wash away the foam caused by the peroxide.

The alveolar opening should be plugged with gauze or with a vulcanite plug, which is held in place by the teeth behind and in front of the opening. The plug will serve the double purpose of keeping the opening from closing up and of preventing the entrance of food and foreign particles from the mouth.

There is a tendency for this opening to be closed by granular tissue, but it should be kept open for a week or two after all pus has ceased

to be found in the antrum, when, by diminishing the size of the plug, the opening is gradually allowed to close. We can hasten the closure by gently curetting the edges of the opening, thus stimulating granulation. The antrum should be thoroughly syringed every other day, and if after three weeks there is still pus present you can consider the condition to have passed from the acute into the chronic stage, when more radical treatment will be necessary.

The chronic purulent condition of the antrum may be caused by anything which would cause the acute inflammation, or by anything which would cause necrosis of bone, as mercurial poisoning or syphilis. Zinc chloride or any caustic or irritant might cause this condition by being forced through the apex of a root into the antrum. Dr. Kyle, of Philadelphia, reports one case caused by arsenic escaping from a cavity while destroying a nerve. The arsenic followed the root of the tooth, causing a slough and necrosis.

Pathologically, the mucous membrane is apt to be much thickened in certain localities, and there is apt also to be exposed bone and areas of necrosis and granular tissue.

The symptoms are here very similar to the acute stage, only not so severe. Lassitude, with pain, which may radiate to other parts of the head; the patient is apt to notice a thick yellowish discharge, which comes through the natural opening or an artificial sinus, causing a bad taste in the mouth.

The diagnosis is made from the history, from subjective and objective symptoms, and by the exploratory lamp and probes. One is also greatly aided by looking in the nostril for pus, which, from its location, you would judge came from the antrum. You are more apt to see pus in the nostril if you get the patient to hold the head forward and to the opposite side just previous to the examination. If you are reasonably sure that pus is present, you may confirm the diagnosis by a puncture of the nasal wall below and one inch behind the anterior end of the inferior turbinate bone, which point is very thin and far enough back not to injure the lachrymal canal. Through this puncture you can easily pass a canula and wash out the antrum, catching the contents in a vessel for examination.

Prognosis: If untreated, it will remain more or less chronic, with continued necrosis of bone. There is little danger of death.

Complications: It may itself be a complication of some other trouble. The complications with it may be infra-orbital neuralgia, due to inflammation extending to the infra-orbital nerve, or severe pain, which becomes localized in one or more teeth, due to inflammation extending to superior dental nerves, which are sometimes covered by mucous membrane; or by pus and necrosis working through the orbital plate, causing ex-opthalmos, or working backward into the ethnoid cells.

Treatment: Should the conservative treatment given to the acute

inflammation fail to cure within three weeks, the more radical treatment is necessary. This consists in entering the antrum and removing all granular tissue, diseased mucous membrane and diseased bone.

There are three operations advised—one when a molar tooth is extracted and the outer wall chiseled away until you get sufficient room to curette. The second is: make an opening through the canine fossa; and the third is the method of Dr. Douglass, which is now considered the best. The Douglass method is to make an incision at the junction of the cheek with the gum, down through the periosteum to the bone. The cheek is then held out of the way with blunt retractors, and an entrance is made through the anterior wall, just in front of the malar prominence. After gaining entrance into the antrum you can remove as much bone as you wish with Rongier forceps, working forward and downward. Make a counter-opening into the nose, behind the lachrymal canal.

After curettage, the cheek and gum can be approximated and sutured, entirely closing the opening between the antrum and the mouth, which is a very great advantage. It can be syringed and dressed through the opening in the nose.

With the first two operations mentioned, where the entrance is made through the canine fossa or through the alveolar process, you will have to keep the opening packed to avoid entrance of foreign particles, with danger of reinfection greatly increased.

In curetting, it is best to use curette with flexible handles, and be careful to remove all detached pieces of mucous membrane and particles of bone, as they would decompose, causing a septic condition if allowed to remain. Also, we have to be careful not to curette into the lachrymal canal or into the infra-orbital canal. The mucous membrane will bleed profusely when curetted, which can best be controlled by packing.

In all these methods the antrum should be plugged with plain or iodoform gauze, which is removed and the antrum syringed every second or third day. Gradually reduce the packing until the antrum is healed, which is usually about the third week.

I cite one case, which Dr. Everitt remembers, where the patient had a severe toothache in the first molar. The tooth was perfectly sound, but the pain was so severe that she had the tooth extracted. Immediately after that the pain was centered in the second bicuspid. After that was extracted, the pain became localized and just as severe in the second molar; then in the wisdom tooth, all of which were extracted. A general practitioner extracted the first two, and I extracted the last two teeth, all of which was unnecessary, as the trouble could have been relieved by syringing the antrum through the nose, as recommended by Dr. R. H. Johnston, of Baltimore, or by making a point of entrance through the place of the first molar after it was extracted, the cause of the trouble being an infection of the

antrum, following a catarrhal condition of the nose, which irritated the superior dental nerve. The condition was insidious and escaped me, as I failed to use the exploratory lamp and puncture.

Another interesting case was referred to me by Dr. Fleming. This case was specific, and the man had extensive necrosis of the antrum. There was a considerable area of superior maxilla denuded of periosteum, and also a necrosis of the frontal bone. This is one of the very few cases I have seen which will almost certainly produce death, as he refuses to be operated upon and shows no tendency to keep up anti-syphilitic treatment.

The paper was discussed by Drs. Betts, Foster, Crenshaw, Johnson, Wheeler, Whitaker.

The Second Vice-President being called to the chair, Dr. F. L. Hunt read the following paper:

PRACTICAL POINTS IN DENTAL CERAMICS.

Dr. F. L. Hunt.

The porcelain inlay seems to have demonstrated the necessity of using, as a filling material, some substance which will completely fill the cavity. By this I mean that the cement used in retaining the inlay is forced into every portion of the cavity, precluding, as it does, the probability of recurrent decay; provided, of course, that the cavity has been properly prepared. The porcelain in this case acts as a preserver of the cement, protecting it from the action of the fluids of the oral cavity. This same result can be accomplished by the use of other filling materials, though with none will the same pleasing æsthetic effect be obtained as by the use of porcelain, this æsthetic effect being one of the strong points in favor of porcelain.

With fastidious patients this æsthetic consideration becomes of paramount importance.

What is true concerning the porcelain inlay in anterior teeth is probably true of the gold inlay, to a greater or lesser degree, in posterior teeth.

Here mention must be made of the fact that the one thing that has brought the porcelain inlay into disfavor, more than any other one agency, is the attempt to insert them in any and all cavities, and in many cases the operator having no knowledge of cavity preparation necessary to the proper retention of an inlay.

It must be borne in mind that the porcelain inlay has a place in dentistry only in practical cases, and those cases usually occurring in anterior teeth.

In those cases in which the mechanical principle involved is lost sight of, failure must inevitably result, and porcelain is therefore condemned.

This is scarcely fair, in view of the successes we so often see when the ceramic art has been even approximately mastered.

Then, too, the consideration due our patients must be considered. Because a dentist is unable to properly insert a porcelain inlay, he has no right to assert that porcelain inlays haven't proven successful. He has the right, however, to minutely study porcelain—not entirely from reading, but by actual experiment. Here is another cause of so many ceramic failures.

Some peculiar statements are printed. The mere fact of a statement's being printed doesn't prove the correctness of the statement. By actual experiment it is surprising to see how many statements are mere theories.

We have read that the inlay should be biscuit baked until the final bake, when the entire mass should be fused to a glaze.

Here we should also be told is a most potent cause for the innumerable misfitting and distorted fillings we sometimes see. I call them fillings because they are often large cement fillings with a small piece of porcelain in the center. These inlays have been made by operators who have followed rules without having experimented to ascertain the accuracy or inaccuracy of the rules.

A little experimenting would have demonstrated the fact that the bake intended as final would not have been final, and also that there was a necessity for trying in and reburnishing—an entirely unnecessary procedure if the inlay is correctly constructed. To retain the correct shape of the matrix, a small portion of porcelain should be placed in floor of matrix and allowed to extend up the sides to margin. One or two cuts through porcelain parallel with both long and short axes will allow the porcelain to pull from center toward margins, thus preventing so-called warping. The inlay should then be fused—*not simply "biscuited," but fused to a glaze.* The fused portion of porcelain acts as a framework to support the walls of matrix.

If only a small portion of porcelain is first placed in the matrix, and is then properly fused during first heating, there will be no warping, and consequently, as previously stated, no necessity for trying in and reburnishing.

It is claimed by some writers that an inlay baked to a glaze at each heating is not so strong as one which has been only biscuited until the final heating. This I am unable to verify or contradict from actual experiment. However, my method of procedure is to bake to a slight glaze from start to finish.

Care must be taken not to overfuse the porcelain. Overfusing not only weakens the porcelain mass, but we could expect bubbles, which would prove disastrous, even though the earlier stages of inlay development had been correctly manipulated. Furthermore, porcelain, when overfused, has a tendency to "ball." The bubbles, however, would appear at margins before the mass would assume a ball-like shape.

We often read that the matrix should be gently worked into the cavity and pressed over the margins, removed and trimmed to shape, annealed, replaced, etc.

I suggest that the platinum (1-1000 inch foil) should not be annealed, should be approximately trimmed to shape before being inserted, and when once inserted should be completed as a matrix before being removed. No trying in, burnishing a little, removing, annealing, trying in, and a lot more of unnecessary work.

Allow the foil to lap tooth as much as possible, to aid in making correct contour.

In cervical cavities the mistake is made in attempting to press the foil directly into the cavity and then forcing it up under the gum, the better method being to trim platinum to line of festoon of gum and bend to curve of tooth. The matrix foil is then easily framed up under the gum. By gently pressing platinum up into cervical portion of cavity first, there will be little danger of finding, upon removal of matrix, that it did not lap the cervical margin of cavity. In cervical cavities the cervical margin is of most importance, and great care must be taken to give close adaptation at that portion above the gum margin.

The paper was discussed by Drs. Everitt, Wheeler, Whitaker, Hunt.

The following paper was read by Dr. J. N. Johnson:

SOMNOFORME AS A SUBSTITUTE FOR NITROUS OXIDE.

Dr. J. N. Johnson, Goldsboro, N. C.

Mr. President and Gentlemen of the North Carolina Dental Association:

In my paper on somnoforme as a substitute for nitrous oxide, my deduction will be drawn from the failures I've experienced, rather than the successful administrations of the anæsthetic under discussion.

There is not much information to be derived from a paper relating only to our successes. There is more of interest in how we overcome our difficulties. Especially is this true of the subject, Anæsthesia.

We have no ideal anæsthetic, general or local. Each administration is attended with danger to the patient; and when you find a dentist or physician that has never experienced trouble or anxiety from their use, you can usually place him as a practitioner with little if any experience. Because we have given somnoforme and nitrous oxide successfully is no reason why we are not going to have trouble. Especially is this true of somnoforme, and we should always be ready for the dangerous symptoms. Usually, with gas, all that is necessary is to remove the inhaler when the oxygen of the atmosphere fur-

nishes and stimulates the depleted tissue, and almost instant relief and recovery is the result.

Somnoforme, as the other general anæsthetic agents, enters the blood channels through the pulmonary alveola epithelium, and is carried by the circulation to the brain and throughout the body. It is not attended by as profound syanosis as the symptoms of asphyxia in nitrous oxide. It is quicker in its action and accompanied by less resistance on the part of the patient while carrying them under; but I've had more trouble with four patients when they were coming from under the influence of somnoforme than in my entire experience with gas.

In fact, when a patient has partaken of whiskey or morphine before presenting for an extraction, and insists on the use of either agent, I would invariably resort to nitrous oxide. I would impress this on the young men entering the practise of dentistry; for, however thorough your college course on anæsthesia, you still have much to learn from the greatest of all teachers—experience. Somnoforme is comparatively a new anæsthetic, and is therefore unsafe in the hands of a beginner; while nitrous oxide may be given until the patient is black in the face or apparently to the uttermost point of asphyxiation, when all that is necessary to restore to normal condition is air.

In my practise the use of somnoforme is contra-indicated when the patient is very weak, anæmic, during pregnancy or just after a woman has given birth to a child.

I will relate my experience with somnoforme in four cases:

Case 1.—Female; appeared healthy; followed usual preparation for anæsthetic; after four or five inhalations, respiration ceased; lowered chair; gave hypo-injection of strychnine; no pulse. As there was no inspiration, I did not resort to nitrite of amyl, but used artificial respiration. After ten minutes of what seemed an age, she showed signs of returning consciousness. Then, upon inquiry, I learned she was convalescing from typhoid.

Case 2.—Female, age twenty-eight, presented for the extraction of six lower anterior teeth; gums festooned; teeth eroded and so sensitive could not be touched; insisted on general anæsthetic, with results as in Case 1, only not so prolonged. History: had child nine weeks old, which weighed nine pounds at birth.

Case 3.—Female, age twenty-four; two abscessing teeth to be extracted; said she could not take cocaine, but insisted on gas. She looked healthy, and, being out of nitrous oxide at the time, gave somnoforme. She went under nicely; removed the two teeth about 5 P. M. She came out from under the influence of the anæsthetic, having pupils of eyes widely dilated; imagined all kinds of things were after her, and insisted that the dentist was her long-lost brother, whom she kept in constant communication with her mother, long since dead (my only experience as a medium); gave her two doses bromide, thirty grains each; one-fourth grain morphine, hypodermically, without

effect. About 10 o'clock I gave her a hypodermic of hyoscine, which produced immediate results. She was perfectly normal in thirty minutes.

Case 4.—Male, age twenty-seven; abscess, in acute stage; began giving sommoforme; patient imagined his satanic majesty was after him; could not hold him; in fact, he came very near wrecking my office. History: had taken several drinks of whiskey and a dose of morphine.

Paper was discussed by Drs. Smathers, James, Highsmith, Hart, Johnson.

Night Session.

A paper prepared by Dr. D. E. McConnell was, in his absence, read by Dr. R. E. Ware, as follows:

THE RELATION OF THE NORTH CAROLINA DENTAL SOCIETY TO THE NATIVE UNDERGRADUATE.

Dr. D. E. McConnell.

In presenting a paper to the North Carolina Dental Society under the head of Dental Education, it seems to me that there could be a no more fitting subject than the relation of that Society to the undergraduate student.

Technical Relation.

The only references to students in our By-Laws are in Article IV, sections 1 and 2, as follows:

"Section 1. No member of this Society shall receive a student into his office to be instructed in the art and science of dental surgery for a shorter period than two (2) years, unless he shall have been a pupil of some other reputable practitioner a sufficient length of time to make his term of pupilage equal to two (2) years; and any member receiving such student shall require of him a written agreement to persevere in his studies until he shall have received the degree of doctor of dental surgery from a regularly chartered and reputable dental college.

"Sec. 2. It shall be admissible for students of members of this Society to be present at the regular meetings, and to offer subject-matter for discussion and take part in all subjects pertaining to the theory and practise of dental surgery."

We will pay our respects to these By-Laws later, but will pause in

passing to say that section 1 seems a relic of the days when dental colleges made allowance in their courses for time spent in the office of a preceptor.

The attitude which a young man takes toward the Dental Society during his student days is usually retained through life, and it should be an important part of the work of the Society to see that he starts right. Oftentimes it seems to me that the Dental Society is a husbandman who neither sows nor reaps, and yet expects a bountiful harvest.

We have in North Carolina about 380 dentists. Of these, over 200 (more than half) are not members of the Society. Why not? For the most part, because the Society made no effort to get in touch with them when they were students. They feel that the Society has never been any help to them, and don't care that it hasn't been; so they don't care a tinker's damn for the Society.

The attitude of these men is not so much that of hostility to the Society as indifference, yet this indifference will be so hard to overcome that the hope of increasing the membership of the Society lies in taking in *all* the new men each year. If we do that long enough, we will have the whole profession.

The dental student should be in touch with the Society of his State from the day he enters college. The colleges are busy teaching the *art* and *science* of dentistry; so the student hears very seldom of what his relation to the public and to his fellow-practitioner should be. He hears a great deal of examining boards, but very little of dental societies. His instruction in dental ethics is confined to one or two lectures on the subject.

This branch of his education *should* be taken in hand by the Dental Society, but it seems to me to be wholly neglected. What little work is done, is done individually by members and not by the Society. Therefore I say the Society expects too much and does too little.

When you ask a Society member how an ethical dentist is distinguished from the other kind, he will nearly always reply: "Those other fellows advertise." Now, what is the position of the Society in regard to that one thing? Does it take the young man in hand early and teach him that the clean, manly way to build up a business is to do it by good, honest work, rather than by boastful broadsides in newspapers? Nay, verily; it leaves him to his own devices, and if he falls into error he is dubbed "quack," "scoundrel," etc.

The dental law of the State is framed, by the wishes of the Dental Society, so that the student is denied any right to practise, and then the Society stultifies itself by winking at violations of the law. There is scarcely a man who hears this who did not break the law in his student days, and I doubt if there is one who has been in practise five years who has not known of some hard-working student who was pegging away, filling teeth for his relatives and friends during vacation time. Did you report him to the grand jury? "No," you say;

"he is a good, honest fellow; needs the money, and those people know he is just a student. Besides, my patrons would think I was jealous of him if I stirred up a prosecution."

When I study that dental law of ours, I think our president summed it up well when, in a conversation not long since, he remarked: "We tried a case in our town last court, and before we got through I said, 'Our dental law is a holy mess.' The solicitor said so, too, and the judge as good as said it."

Gentlemen, it is high time this Society should be done with giving the dental student neglect and lessons in double-dealing. We have a provision in our By-Laws, which has been read, that a member may have a student in his office, provided the student sign up for two years and pledge himself to finish his course in college. Yet we have a dental law which says, if that student fill a tooth or mend a plate, he is liable to prosecution. Are we educating him properly when we give him such lessons in inconsistency?

The Society depends too much on a simple invitation to join the Society, given to young men when they pass the board. This invitation comes usually at the most inopportune time. Just when it is given, nine times out of ten, the young man is in debt—to his friends who have helped him finish his course, to the supply houses who have helped him furnish his office—and he feels that the days and dollars would be more profitably spent at home, reaching for work, than in Society discussions and hotel bills.

It is at this time that the ad. writer gets in his work, if the Society has not already made some effort to enlist the sympathy of the young practitioner. And, by way of illustration, I append some samples of this literature, which, you see, make a very subtle appeal to the young man who feels he has the ability to do good work, yet is sitting idle because his ability is unknown to the public.

We too often lose sight of the fact that the greatest loss the advertising dentist sustains is the upbuilding influence of the Society. The general public by no means considers the advertiser disgraced. If he has never known this Society influence he will never feel that he has lost anything. Therefore, let us get that influence around him in his student days.

Now, since I have spent so much time on the disease, you will ask what have I for a remedy.

In the first place, our dental law would be the better for a revisal along the lines of the new Pennsylvania law, but that comes under the head of jurisprudence, and we will not go into that here. It would seem a feasible plan for the Society to appoint a committee, composed of several members, and make it the duty of each member to communicate with the dean of the college of which he is an alumnus and find how many students from this State are there. Then he could write to each of these students a time or two during the session, making an effort to get them interested in Society work. Papers from

these young men would always be interesting, as the colleges are experimenting with all the new methods of practise; and even a letter, telling of the doings of the session, would be interesting to the alumni of that school.

Let us keep it in mind that the undergraduate of to-day is the dentist of to-morrow; and, since we need the dentist of to-morrow, let us go after the undergraduate to-day.

The paper was discussed by Drs. Ware, Everitt, Bland, Turner, James, Betts, Jones.

The hour for the Memorial Service having arrived, prayer was offered by Rev. E. M. Battis.

A paper on "The Life and Character of Dr. H. D. Harper" was read by Dr. J. M. Fleming, as follows:

DR. H. D. HARPER, SR.

Dr. J. M. Fleming.

At the hospital in Wilson, N. C., on the morning of November 24, 1906, there died Dr. H. D. Harper, Sr., of Kinston.

Notices such as the above are read day by day, and the immediate family and relatives mourn the loss of some loved one, and kind, sympathetic friends cover the grave with flowers and commend us to an all-wise Providence, "that doeth all things well"; and time, with its all-healing cure, bears us on to meet life with its wisely hidden future.

But when the news of Dr. Harper's death was known throughout the State there was not a single dentist who did not feel the loss almost as keenly as the members of his own household, and time has not yet softened our grief. Our coming together in annual convention opens anew our sorrow, and we feel his loss more keenly than ever before. We meet to-night to lay at his feet our tribute of love and esteem. Possibly no one of our members was more universally popular than he, and his place among us will not soon be filled. We will hardly find another with so varied accomplishments. Did we need a minister to open our meetings with prayer, we called on him. Did we need response to the address of welcome, he could make it, and without a moment's notice. Did we need enthusiasm in a dry discussion, he could supply it. Did we need a clinician, we could find no more thorough operator in the whole State. And did we need a friend, we invariably turned to him and found in him one in whom there was no variableness, neither shadow of turning.

Dr. Harper was born in Johnston County in May, 1847, and would consequently have completed his sixtieth year had he lived a few months longer. He lived on his father's farm till he was seventeen

years of age, at which age he entered the Confederate army and served with distinction till the close of the war. He then returned to his father's farm, and the few years following showed the spirit of the man. When we read the story of those years of toil and self-denial, we are not surprised at the measure of success which attended him in his mature manhood. Returning to a farm devastated by the ravages of war, he bent his energies for four long years towards rebuilding the home and leaving his father comfortable. In this he showed to the world that the destruction of property does not destroy manhood, and that though a man may be poor there is no excuse for his not being a man. Seeing his father comfortably fixed, he began to plan his own education, and at the age of twenty-three he turned himself to that task, and never wavered till he saw its accomplishment. What a lesson for young men of to-day! If they could only realize that it is not so much how early they enter the profession as how well prepared they enter it! He foresaw the need of a thorough education, and in the face of all difficulties he secured it. Without it he never could have taken the stand he did in the Society and in the State. Leaving home without money, he entered the University of Kentucky and worked his own way through the literary and ministerial courses, and even then he found time to begin the study of dentistry with a dentist of the town. Leaving the University of Kentucky, he entered the University of Tennessee and completed his dental education there. After a few years of traveling, preaching the gospel and practising dentistry, he finally located in the town of Kinston, which place he made his home till the time of his death. From the very beginning of his practise he was successful, drawing his patronage from a large section of his State; and yet, in spite of a lucrative practise, he found time for everything which tended to the social and material advancement of his town and community. He served for some years on the county board of education; he was at one time commander of the naval reserves of his town, and at the beginning of the War with Spain he was elected chaplain of the North Carolina Naval Reserves. He was also president of the North Carolina Dental Society in 1895; and in all these positions he served with great success. Whatever he undertook was carried to a successful completion, against all odds. He never came to a meeting of the Society but to contribute to its success, and whatever he was called upon to do was well done. He was married in 1877 to Miss Delia Coward, who preceded him to the grave about eight years. The immediate cause of his death was pneumonia. He had been called to Wilson to the bedside of his daughter, who, while a student there, had contracted typhoid fever. His case would not yield to medical skill. His system, broken down with the anxiety and care consequent on the critical illness of his daughter, was not able to withstand an attack like that, and on the morning of the 24th of November his spirit took its flight "into the open sea of eternity." Two days later,

death entered the home again and claimed the soul of the young daughter. Probably no death in all the State has caused more universal sorrow than that of Dr. Harper. He counted his friends by the number of his acquaintances, and a great concourse of them came from far and near to attend his funeral. The services were conducted by the fraternal orders of which he was a member, and just at dusk on the evening of November 25th they laid him in his last resting-place and covered his grave with flowers—mute monuments of the esteem in which he was so universally held.

Do you look for the secret of his success, do you look for that in his nature which drew men to him, you will find both in one sentence—he loved his fellow-men.

In religion he belonged to the Christian, or Disciple, Church, was a licensed minister of that denomination, and by the broadness of his views and by the gentleness of his life he was instrumental in leading many men to a better life, where other ministers of more narrow views would have failed utterly to reach them.

Towards his fellow-men his life was one of unselfish service. There was not a man, woman or child in all his acquaintance who would hesitate to ask a favor of him, and among them all his loss will be keenly felt.

It is hard to think that Dr. Harper is dead. We have only to close our eyes and see again his form—the quiet dignity of his face, the merry twinkle of his eye—to hear again the sound of his cheerful voice, and feel again the warm grasp of his hand.

There were many things in his life worthy of emulation, but by mere words I could no more give you an idea of the noble character of the man "than I could point to you a few measures of grain and bid you behold a living harvest."

In conclusion, I know of no greater tribute to pay him than this: I never heard him speak an evil word of any creature.

Raleigh, N. C., June 18, 1907.

A paper on "The Life and Character of Dr. E. P. Keerans" was read by Dr. Chas. A. Bland, as follows:

LIFE AND CHARACTER OF DR. E. P. KEERANS.

Dr. C. A. Bland.

It is a solemn and sacred duty to take part in this memorial service. There is a feeling of reverence which the living have when they speak of those who have gone on before into the land of shadows and mystery. And every life, no matter if its every hour is rich with love and jeweled with joy, will, at its close, become a tragedy as sad and deep and dark as can be woven of the warp and woof of mystery and death.

The death of Dr. E. P. Keerans was particularly sad, for the summons came at the hour of victory, while the shadows were still falling toward the west. A better sketch of his life and character cannot be given than the one which appeared in *The Charlotte Observer* the day after his death:

"The death of Dr. Ernest P. Keerans yesterday morning removed from Charlotte a professional man, a kind-hearted citizen and friend, and a Christian gentleman, who will be much missed in the wide circle where he has been known and admired since his early manhood. The gentle, affable manner which was natural to him at all times and was a notable characteristic of the man, attracted all classes to him, and all found in him a friend. The professional service which in many cases he willingly gave to the poor, the visits he paid to their homes, giving of his means to their needs in the hours of sickness and death, caused him to be known as a friend of the poor, and such a man, when called away, is surely missed in any community.

"Dr. Keerans was a consistent member of the Presbyterian Church, having joined that communion when a boy. His membership in this city was with the Second Presbyterian Church.

"During his long illness, of more than four years, Dr. Keerans was a great sufferer, but his patience was equal to his affliction, and never did he complain. Realizing fully his condition, and knowing he could not recover, he faced the fact without fear and in Christian faith, expressing often his willingness to die and his assurance of rest in the future life.

"Dr. Keerans was born in Thomasville, in September, 1867. He was the son of Mr. J. T. Keerans, deceased, and Mrs. E. A. Keerans, who resides in this city. Early in his childhood Dr. Keerans' parents moved to Statesville, and it was there his boyhood was spent. He received his literary education in Statesville and his dental education at the Baltimore College of Dental Surgery.

"Coming to Charlotte as a young man, he began his professional life here, and has been a citizen of this city ever since that time.

"In November, 1899, Dr. Keerans and Miss Daisy Oates, of this city, were married. She, with his mother, four brothers and one sister, are the nearest relatives who survive. His only child, a daughter, died in infancy. In his devotion to his wife, his mother and other members of his home, Dr. Keerans' true character was seen at its best.

"Dr. Keerans had a serious attack of pneumonia in March, 1903, which left his system in that condition which rendered him an easy prey to the disease from which he died. He traveled much in search of health and consulted many eminent specialists, but to no avail. He has been confined to his home on South Tryon Street for the past two years, and it was there he peacefully passed away early yesterday morning."

It is well that we pause for a moment in our busy lives and rever-

ently bare our heads and speak tenderly of our friends who have passed away. Our faith in God, our assurance of immortality, makes us look on death as but the beginning. It is a sweet and comforting thought that these familiar faces will greet us when our hearts are stilled in death and when the immortal soul takes its flight.

"Somewhere on this earthly planet,
In the dust of flowers to be,
In the dewdrop, in the sunshine,
Sleeps a solemn day for me.

"As it purples in the zenith,
As it brightens on the lawn,
There is a hush of death about us,
And a whisper, 'He is gone.' "

Touching remarks were made also by Drs. Faulkner, Everitt, Betts, Jones, Turner, Harris, Griffith, Livermon, Jameison, Judd and Foster.

Morning Session.

Drs. Harris, Edmundson and Hilliard were appointed a committee to audit the Treasurer's books.

On motion the name of Dr. J. A. Gorman was transferred from the active to the honorary roll of members, he having removed from the State.

The following paper on "Prophylaxis" was read by Dr. R. P. Anderson:

PROPHYLAXIS.

Dr. R. P. Anderson.

Prophylaxis, so far as this paper is concerned, refers to the prevention of diseases of the mouth and the decay of the teeth. Owing to the position and uses of these organs, their hygienic condition is an insurance for the health of other organs, and thereby the whole economy. The most important branch of the curative art is this *prevention*. The *way* and the *how* can be summed up in one word, *cleanliness*. I know that this is right, because John Wesley says "Cleanliness is next to godliness." This is evidence enough on that.

Now, *where* shall we begin, and *how?*

The mouth being a damp, warm, dark place, the conditions are favorable for the growth and development of all sorts of germs and fermentations and endless chemical combinations.

Must we simply fill cavities and make plates and come to these meetings to spend our time in long discussions as to this or that material for stoppings for cavities, which, at best, are but temporary? Unfortunately, there is a need of these things. But is that the best or all that we can do?

A physician's patient has smallpox and is brought through it to recovery. Very good. But how much more desirable that the disease should have been prevented altogether.

If we could only inoculate our patients with something that would prevent the necessity of coming to the dentist! "Oh, fiddlesticks! Talk about something that you know or that is possible," you say. Well, what is possible? What is not possible?

Mr. Edison says that "We know nothing yet"—that in "five hundred or a thousand years we may begin to suspect."

When a gardener sees there are mole holes under his plants, what does he do? Fills them. Yes, and proceeds to trap for moles; but the plants are already injured. If he had used as much foresight as he did "hindsight," perhaps the "varmints" never would have gotten in at all.

Now, I contend that the decay of the teeth, for instance, is preventable.

Perhaps some one asks if the patient is to be inoculated with some sort of virus. Not exactly. Something better than that. Fill a cavity or vaccinate for smallpox, and at best the benefit is only temporary. Nothing happens without a cause. Inculcate into the mind of humanity *cleanliness* for the *mouth* and *teeth*, and the benefit will go on down through the generations and cannot be calculated. If a tooth is kept clean it will not decay. While it may be impracticable to keep all teeth entirely free from foreign matter in some stage of fermentation, it *is* possible, by the proper use of proper brushes, in connection with some suitable antiseptic detergent, to render same powerless. Nothing we can do for our little patients is of more value to them than to instruct and impress them with the importance and proper uses of these articles. I spend much time in explaining to my patients that, first, all particles of food must always be kept from between or on the teeth. This may be done by the use of a quill toothpick or waxed floss silk, but the best instrument for this purpose is strips of soft rubber, but a little less than one-eighth inch wide and about three inches long, from thick rubber dam, or such as is used for the inside tire for bicycles. Taking the ends of the strip with thumb and forefinger of each hand, the middle fingers will serve to carry it to any part of the mouth. They should be used after each meal. Second, the teeth should be thoroughly cleansed with a suitable brush, some antiseptic paste or dentifrice and some water, all

used in the mouth at once; this to be done just before retiring, soon after arising in the morning and after the noon meal. At three other convenient times during the day the mouth should be thoroughly rinsed with some good antiseptic mouth wash.

If we shall ever be able to teach humanity to use the simple means of *cleanliness* and *prevention*, it will be one of the greatest benefits the race has yet received.

The paper was discussed by Drs. Jameison, Brooks, Judd, Jones, McCracken, Johnson and Anderson.

The following paper was then read by Dr. F. G. Chamblee:

PULP MUMMIFICATION.

Dr. F. G. Chamblee.

Mr. Chairman and Gentlemen of the Society:

It is not my intention to criticise any old or advance to you any new methods of pulp mummification, nor will I make any assertions, but will merely introduce the subject as best I can, with my very limited experience and knowledge on the subject, to provoke discussion. As the old saying goes, where there is a multitude of counsellors, there is much wisdom.

In all paths to success we find that the man who reaches the highest achievements in life is the man who is able to adapt himself to surrounding circumstances. We should not have any special set methods and use them exclusively, without first considering the advantages and disadvantages of other methods; always taking into consideration the temperament, accessibility of the patient to the dentist, the financial circumstances, as well as the field of operation, before proceeding with the operation.

We have all been taught in college and advised by men of experience to stick to the old, reliable and most sure method of extirpation of the pulp; but we will find, if we stick to this rule exclusively, we will have trouble, which could have been avoided by using other methods, either in combination or separately.

We find that the third molars, when all the other teeth are intact, are as a rule very inaccessible to the operator's hands to treat successfully; and, too, their uncertainty in form will favor mummification in preference to the tedious operation of extirpation. Not only do I think it could be used to an advantage in the third molars, for in some mouths the third molars (owing to size of oral cavity) are more accessible than the bicuspids in other mouths. So, in some mouths, we are almost forced to resort to mummification of the pulp, from the first bicuspid back, or extraction, or an unwarrantable treatment by extirpation. Dr. Waas, of Hammonton, N. J., advises mummification of all teeth that have more than one root.

Gentlemen, I don't see any use of taking the pulp from the root canals, unless we can put something in its place. I dare say there isn't one in this assembly who fills even fifty per cent of the root canals properly.

Dr. Price, of Cleveland, exhibits X-ray skiagraphs of roots filled by Dr. McGinnis on a wager. He declares he could begin anywhere, work at any angle, freer than anyone could in the mouth, and not more than three out of ten could be said to have been well filled.

We find that mummification of the pulp dates as far back as the use of arsenic as a devitalizer. It was found that after the use of arsenic there is a quieting of the pulp for a considerable time, but the virtue of this seemed to lie entirely in the sterilization of the pulp. We find, too, that there are other agents that have acted as noticeably as arsenic.

Dr. W. D. Miller was the first to present the method of mummification of the pulp by arsenic to the profession, in 1893, at the Columbian Dental Congress, where he read a paper on the subject; but he gives Dr. Witzel, of Germany, the credit of being the first systematic observer in this direction. Dr. Witzel, as early as 1874, devitalized the crown portion of the pulp, extirpating that portion, leaving the pulp in the canals undisturbed, their exposed ends being treated as freshly exposed pulps. This method was followed by Herbest, of England, who used the native arsenic sulphide or metallic arsenic instead of arsenic trioxide.

Dr. Miller employed such agents as the very strongest and most penetrating antiseptics, such as the cyanide, bichloride, salicylate of mercury, sulphate of copper, and oil of cinnamon.

Ortho cresol, carbolic acid, trichloro phenol, and zinc chloride penetrate the tissue rapidly, but are too diffusible, disappearing in a few weeks. Bichloride of mercury .0075 grams, thymol .0075 grams, in tablet form, has been employed to a great extent, and there has been some untoward results reaped from its use, but it tends to discolor the tooth; so its use has been entirely abolished. Its use is first to clear all the pulp from the pulp chamber. Place a tablet in the chamber, crush with an amalgam burnisher, and cover with gold foil, and proceed with whatever filling you wish to use. By the employment of these methods, by the use of single drugs, men have accomplished great results and have created such an interest in this path of dentistry, until at present, by intelligent experimenting, they have found that by the employment of a combination of drugs, made to the consistency of a paste, they can reap better results, without the ill effects of a single drug.

Dr. J. A. Waas, of Hammonton, N. J., is now practising a method, which he credits to Dr. Soderberg, of Austria, from which he claims unequaled results. He has now 250 cases under his observation which were treated from 1896 to 1904, and he claims no failures.

Dr. Soderberg, who is the father of the treatment, claims 572 cases

up to 1904 without a failure. Dr. Haughton, who is a member of the same society, declares that he practised the same method of Dr. Waas and began about the same time, and he reports 317 treatments with 100 per cent successes, from 1896 to 1899, and in 1904 he reports 642 cases. While his record will not quite stand at 100 per cent, he declares he has had success that will far surpass any method he has ever tried before. This treatment consists of, first, devitalizing the pulp with arsenical paste, and remove the coronal portion of the pulp, leaving the pulp in the root canals untouched, apply the paste and proceed with filling. The paste consists of dried alum, thymol, glycerine—equal parts; zinc oxide sufficient to make a thick paste.

Last, but not least, is the method of Dr. Kellogg, of Chicago. He has recently put a paste on the market which he terms an embalming paste, from which he declares he has reaped almost unparalleled results; and other dentists who have used it are ready to shout his praise for his new discovery. I have used it myself to a very limited extent, and have reaped perfectly satisfactory results, when properly applied. I have used it in about sixty or sixty-five teeth within the last twelve months, and have had no ill results, when properly applied. But in case I should be timid and not get sufficient exposure, I find there is slight pain for a few days, in some cases, and then the pain would subside. So it is very necessary that we should get sufficient exposure. The application of the paste is to a freshly exposed pulp, just enough exposure to get blood. Flush cavity with hydrogen peroxide to arrest the hemorrhage, apply a small bit of paste, about size of a pinhead (or according to amount of pulp to be mummified) to the exposure, place a piece of soft amalgam on paste, and gently burnish it over. This done, you will begin with hard amalgam, and burnish harder as you progress with the filling, producing pressure anæsthesia, as there seems to be a little cocaine in the paste.

Judging from effects, I should think the paste contains cocaine to relieve pain, pepsin to digest the pulp, and iodoform for its well-known properties, the iodine combining with the mercury of the amalgam, producing the iodide of mercury, which is a very powerful sterilizer. The iodide of mercury seems to embalm the pulp, and leaves a dry, non-septic and lifeless tissue, incapable of forming a harbor for infectious germs, which produce abscesses and pericementitis.

The paper was discussed by Drs. Highsmith, Patterson, Richardson, Faulkner, Anderson, Johnson, James, Norris, Everitt.

The resignation of Dr. C. G. Powell was received and accepted.

A paper was read by Dr. C. A. Whitehead as follows:

THE PROFESSIONAL STATUS OF DENTISTRY.

Dr. C. A. Whitehead.

Mr. President, Ladies and Gentlemen:

I invite your attention for a few minutes to the purely professional aspect of dentistry—that is, to the advantages of dentistry as a calling, when compared with other professions. I feel that amid the many interesting and necessary discussions of purely mechanical problems it will do us good to pause now for a moment to view ourselves as others see us, and to inquire what rank we are taking in the march of progress.

Before attempting to determine the present status of dentistry as a profession, let us recall the standards by which all professions must be measured, and the features by virtue of which they reach the dignity of a profession.

The principal features which characterize the true profession and distinguish it from a mere trade, I believe, are: first, the existence of special schools or colleges for the exclusive benefit of the profession in question; second, the maintenance of professional associations, such as is here assembled to-day; third, difficult and complex work to perform; fourth, the existence of a distinct literature, both historical and contemporary; and last, but not least, the maintenance of a code and practise of ethics.

The status of a profession may be rightly determined by the extent to which these several features are developed and maintained. I therefore ask you to glance with me at these features as belonging to the dental profession, and I believe we will find the glance satisfactory and encouraging.

Do not think me biased or extreme when I state that we have the most rational, most advanced and most effective system of schools of any profession whatsoever; for the average American dental college to-day prepares its graduates more thoroughly to actually perform the work devolving upon them than does any medical school here or abroad prepare its medical graduates to perform their work. All of the younger dentists here to-day know how systematic and rigid are the requirements of the National Association of Dental Faculties, yet physicians say that most medical schools are very lax as to attendance, and woefully deficient in hospital or infirmary facilities.

Without wishing to boast, I believe that the nature and quality of our association transactions compare most favorably with those of medical, pharmaceutical and other scientific bodies. A notable point of excellence in dental associations is the practical clinical feature—a feature which is almost limited to us.

As to the complex nature of dental work and the effective manner in which we meet our mechanical problems, there can be no doubt about our right to high standing. First developing and perfecting gold work, we next evolved the bridge, and now have added the wonderful art of porcelain work. As an example of the most recent advances, we have only to consider the effective adaptation of the microscope to work in the mouth, by the aid of which we are enabled to produce finish and precision of work impossible with the naked eye. For the working-out of this valuable adaptation we are indebted to Dr. S. W. Bowles, of Washington, D. C.

When we come to compare dental ethics with the ethics of other professions, we see at once that our profession is an honorable one in this respect also; but here I fear we are in danger of the encroachments of commercialism, and I believe that this and all State associations should consider the possible ways and means of limiting the rapid advance of the "dental parlor." Our profession is a profitable one when confined to legitimate and ethical limits; and I wish to call your attention to the fact that a recent report on the comparative earning power of the professions puts the average physician's cash income at $1,200 per year, while the average dentist's income is estimated at $2,000.

In conclusion, my friends, let me say that the status of our profession is high, indeed—viewed from all points, as high as any profession—and that we need only to nurture and develop these characteristic features of the true profession—our schools, our associations, our high grade of work, our literature, and our professional morals—to raise our standards even higher and to establish a basis of professional pride pardonably great.

Dr. D. L. James read the following paper:

DENTAL EDUCATION.

Dr. D. L. James, Greenville, N. C.

Mr. President and Members of the North Carolina Dental Society:

At the present time, when the shelves of private and public libraries are groaning beneath their ever-increasing loads, when thousands of presses are sending forth day and night their printed messages, until the earth is filled with them, it seems almost like presumption for me to attempt to offer any new information to a body of scientific men. Yet, if I have nothing new to offer, but only call your attention to some of our greatest needs, you will surely pardon the seeming egotism on my part.

I boldly say to you, gentlemen, that the greatest need of the hour is a higher dental education and a better-informed people in regard to our profession. Does the profession realize its responsibility as

being the authority upon the subject when it allows dentistry to remain one of the most obscure subjects in the current literature of our time? Is it to the credit of the dental profession that nothing appears in the public prints but detrimental articles, intended either as an advertising scheme or upon subjects that have mystified and awed the public, and others that have been written up by the reporters who are not competent to handle the subject?

I believe that we, the profession, are responsible for the widespread ignorance and misinformation about dental affairs which prevail everywhere; and by the proper use of educational means we can win recognition, if we are efficient, and I think we are.

The Legislature of North Carolina of 1907 has clearly defined the status of dentistry (reaffirming the opinion of that learned jurist, Chief Justice Pearson), declaring dentistry a special branch of surgery. Now, gentlemen, this betokens a new era for our profession in North Carolina; and we, the members of our State Dental Society, must awake from our lethargy and carry forward the work that is already begun of educating the public. The first and probably the most important place to begin is with our State Examining Board. That is the door; that is the vulnerable point to guard. Think of the great responsibility resting upon the board; think of the great responsibility resting upon the membership of our Society in electing members to that all-important position. And yet the position is sometimes bought and sold, politically, or used for advertising purposes. Now, I don't want anyone to think that I say this because I want to fill some vacancy on the board. I have no such aspirations and would not accept the position were it offered me; for I would not feel competent to fill it with credit to myself or to my State. Nor do I intend this to cast any reflection on our present board nor any member of it.

In the second place, we need to better educate or inform our own membership. I say this advisedly, for I have seen and known our members to do so many foolish (I will not say unprofessional) things.

We must educate our Executive Committee, so that they will not change the place of our meetings when the Society votes almost unanimously for one place, without the best of reasons.

We must educate the presidents of our Society, so that they will not call for the election of officers out of the regular order of business. Educate dentists not to work on Sunday. That the students must not practise without license.

Only a few weeks ago a lady who had a son in a dental college asked a member of this Society in one of my adjoining counties if he objected to her son practising dentistry while he was at home during the summer. She came to see me, to get my permission, as she expressed it; but when I informed her that we dentists had no more authority to give him permission to practise than we did to steal, she seemed utterly astonished.

Only a few years ago I heard one of our members place in nomination for the first vice-presidency of this Society a man who was not even a member. We must learn that the election of officers is not the most important work of our Society, and many other things I could mention.

In the third place, we need to educate our physicians in regard to our branch of surgery. It is astonishing how little the average medical doctor knows about the teeth. A physician brought a little girl, about nine years old, to me the other day to extract a six-year molar, and I could not easily convince him that it was a permanent tooth.

I might spend an hour in speaking of the relation between the physician and dentist, but will only say, and assert it with all the emphasis that I can command, that there must be a closer relation between us. We must know more of general medicine; they must know more of dentistry.

In the fourth place, we must educate the mothers of our land. "She who rocks the cradle rules the nation." Oh, how painfully ignorant many of them are along this line! How few of them ever think of the care or the importance of their children's teeth! Here we must do our greatest missionary work; here we must be both teacher and preacher. We must indelibly stamp in their minds the consequences and the danger of such neglect.

Fifth, we must educate our school-teachers to see that their pupils have the proper instruction in dental matters. Rare, indeed, is it that a dental surgeon is ever invited to lecture to a class or a school. And why is that true? It is simply because our teachers themselves do not know the importance of dental education.

And last, but not least, we must educate the laity, for the ignorance of our people at large about their teeth is simply appalling. And when we have done these things, then, and not till then, will the importance of our profession be felt.

I have longed to see the day dentistry would be elevated to the plane of an accepted, recognized and acknowledged liberal profession—a profession coequal in character, in dignity and general esteem and appreciation with medicine, with general surgery, with law, and with any and with all the accepted and accredited departments of science. I long to see the day when we shall have a closer harmonization among all the professions, trades and callings, all working together for the benefit of mankind; for we are all parts of one stupendous whole.

It is related that at the dedication of the great temple which Solomon had built, a feast was given in honor of its completion. The king, noticing the ironworker among the guests, asked, with a show of displeasure, "What dost thou here?" to which the ironworker responded, "I understood the feast to be in honor of all who contributed to the building of the temple. "But," replied the king, "thou didst no work upon the temple." "True," admitted the ironworker,

"but I made the tools with which all these men worked, and without which there could have been no progress." The lesson of the story is that the forces of the mental and manual workshops of the world must, in the very nature of things, be mutually helpful, must be harmonious in their aims. The professional and industrial ideals must be pursued on the same plane of progress to the same goal of perfection.

The papers were discussed jointly by Drs. Johnson, Frazier, Wheeler, Ray, Patterson, Livermon, Everitt, James and Whitehead.

Under the discussion of this paper the question was raised as to why the meeting had been changed from Wrightsville to Morehead. Dr. Everitt, the Chairman of the Executive Committee, explained that the hotels at Wrightsville had not offered the same rates, when it came to the final arrangements for the meeting, that had been offered when the Society had been invited there, and that the Executive Committee had decided to carry the convention elsewhere rather than be treated in that way.

On motion, the action of the Executive Committee was endorsed unanimously, and a vote of thanks tendered its chairman, Dr. Everitt.

The following paper was then read by Dr. J. C. Watkins:

MATERIALS AND APPLIANCES.

Dr. J. C. Watkins.

As a subject, materials and appliances is so broad that it covers the entire scope of dentistry. The object of this paper is to simply call attention to a few instruments and materials that have been helpful to us.

For the extraction of teeth, the Common-sense forceps are very practical, and with them one is well equipped for this particular work. The bayonet-shape upper-root forceps of this set is our favorite, and with it the writer has extracted all of the different teeth in the mouth.

The Cryer forceps are splendid, and Dr. Cryer spoke the truth when he said "that these two pairs are sufficient to extract any tooth in the mouth that ought to be extracted."

The Physick forcep is invaluable in the extraction of lower wisdom teeth, especially those that are impacted.

The Dodel elevators are good, and at times will help you over insurmountable difficulties.

With one of the modern vulcanizers, especially the "bar-lock," you will never have porous dentures, regardless of how fast or how slow you "run up" your vulcanizer."

Gutta-percha, for saving children's teeth, has been our best friend. It will preserve them for years. We have removed them in cases where for twelve years they have preserved the teeth, thus protecting these soft, fragile teeth, until they have developed sufficiently to hold permanent fillings.

We do not use very much noncohesive or soft gold foil now; but when we see fillings forty, fifty and sixty years old that are still good, we should not hesitate to use this form of gold in places where we think it is indicated.

Cements are being improved very rapidly, and it is quite possible that the modern chemist will yet give us an ideal cement, one which will in a measure replace many of the present filling materials.

The cast or inlay fillings are being used more every year, and they seem to stand about as well and in many cases better than the regular fillings.

Those who were present at this place three years ago may remember that in a paper I mentioned my two hobbies, which are the sterilization of instruments and the care of the teeth.

Prophylaxis treatment, to us, seems to be the most important thing in dentistry, and those materials and appliances that will help us prevent decay, strengthen teeth and get the gums in a perfectly healthy condition are the ones we should most cherish.

Of course, we should treat and cure pyorrhœa—and all honor to our beloved Dr. Arrington, who first demonstrated the practical cure of this terrible disease; but we should endeavor to get the infant upon the eruption of its first tooth, and see to it that its teeth are kept clean; then we will not be troubled with so much filling.

A Thoroughly Clean Tooth Will Not Decay.

For the thorough removal of all deposits the instruments designated by Doctors Arrington, Kirk, Thorp and Smith are among the best.

One of the greatest inspirations I have ever experienced in the profession was when, upon invitation, I spent two days with Dr. D. D. Smith and saw over forty of his regular patients. The mouths of these patients were simply wonderful. Whether it was the mouth of a child or an old person, where the gums had receded half-way down the roots of the teeth, they were all beautiful. In all cases the gums were of the natural pink tint, with typical striations and beautiful festoons, while the teeth were translucent, having the appearance of polished ivory. This work is not visionary, because in a few months I have seen unnatural, sensitive, congested, bleeding gums become

healthy, and the dull, opaque tooth substance, loaded with an "old ivory" pigment, transformed into a bright, living organ, having an impressive individuality.

Dr. Smith's treatment is, in his own words, "forcible, complete and frequent removal of the stagnant irritants and toxins which perpetually recur on and between the teeth and along the gum margins." This treatment is repeated every month.

The instruments used by Dr. Smith are his scalers for the removal of the accumulations, and polishing the teeth with pumice on sharpened orangewood sticks, carried in a porte polisher. Dr. Smith insists on *hand* polishing with the orangewood, and his patients must be faithful with their brush and tooth powder.

In connection with the prophylaxis treatment, we get great satisfaction in using our orangewood in one of Dr. Alexander's engine polishers. This not only removes stains, but also gives the teeth massage, which is very helpful.

The Whiteside polisher, which consists of serrated rubber points, carried in a suitable handle, also gives good results.

The paper was discussed by Drs. J. M. Fleming, Judd, J. R. Osborne.

The committee to which the annual essay was referred, made the following report:

REPORT OF COMMITTEE ON ANNUAL ESSAY BY DR. CARL P. NORRIS.

Your committee beg leave to report as follows:

The essay abounds with many good and valuable suggestions, and is full of hope and encouragement to the true and honest practitioner for attaining the highest success in the fulfilment of laudable aims and desires. We advise the reading of it by every member of the Society, and call especial attention to what he says about the duty we owe to our association, to our patients and our Society; his advocacy of the refining and ennobling influence of education; the example we should live to the world, so as to win for us respect and influence in our community, "so that the Book of Life may the shining record tell." The essay is carefuly written, couched in elegant diction, containing many valuable suggestions; and we heartily commend it to the members of the Society for careful consideration.

E. J. TUCKER,
J. S. SPURGEON,
J. N. JOHNSON.

Dr. Osborne being called on for his annual address, he having come in late, reported that he had no address prepared, but he made his usual witty speech.

Afternoon Session.

election of officers.

President—Dr. D. L. James.

First Vice-President—Dr. C. A. Whitehead.

Second Vice-President—Dr. H. D. Harper.

Secretary—Dr. C. A. Thompson.

Treasurer—Dr. R. M. Morrow.

Essayist—Dr. J. H. Dreher.

Members of Examining Board—Dr. C. A. Bland, Dr. F. S. Harris.

Place of Meeting—Charlotte.

Time of Meeting left to Executive Committee.

Dr. J. N. Johnson offered the following resolution:

Resolved, That no member of the Examining Board shall serve more than six years continuously, and that he shall not be eligible for re-election for an interim of two years thereafter.

The resolution was received to be acted on at the coming meeting, the Constitution requiring a year to elapse before action.

Dr. Harris, on behalf of the Finance Committee, reported that the Treasurer's books were found correct.

Night Session.

Dr. J. Martin Fleming, rising to a question of personal privilege, explained the case of the Society against Dr. R. R. Folger, of Mt. Airy. In this case Dr. D. N. Hicks had seen fit to criticise the course of the prosecutor, and had sent out circulars condemning him. These circulars and all correspondence in the case were read, and on motion of Dr. Everitt the action of the prosecutor was endorsed and a vote of thanks returned to him.

The Supervisor of Clinics made the following report:

REPORT OF SUPERVISOR OF CLINICS.

In making his report, your supervisor wishes to express his thanks to Dr. Staton for the use of his office and for his aid in securing patients for the clinics, and to express his regrets that so many of the gentlemen whose names were on the program for clinics were not present to perform the operations.

Dr. S. P. Hilliard, of Rocky Mount, made a clinic, filling two mesio-approximal cavities in central incisors, getting heroic separation with Ivory's separator, and making extension for prevention with diamond disk, and having fillings to knuckle midway from cutting edge to gum. Dr. Hilliard explained all the details of the operation, which was completed with beautiful effect, and was in every way a success.

2. Dr. J. H. Gettys, of Forest City, gave a table clinic of a clasp plate with iridio-platinum wire and rubber attachments. This was for a partial lower denture, and 14-gauge wire was used, and the posterior tooth on each side (which were bicuspids in this case) was crowned with shell crowns, and to these the clasps were fitted, making a very secure attachment.

3. Dr. D. K. Lockhart, of Asheboro, N. C., made a clinic of a bridge in which cast gold fillings were used for abutments. This was a bridge extending from the cuspid to the first molar. In the cuspid was a cast filling, to which was attached a pin, which extended into the pulp canal. This formed the anterior attachment. The posterior attachment was a gold inlay in the molar. This was a very artistic and cleanly substitute for the natural organs.

4. Dr. J. C. Osborne, of Lawndale, gave a clinic demonstrating the use of waxable rubber. By its use the process of making rubber plates is very much shortened and simplified, as the separating of the flask after investment is eliminated, as is also the possibility of having the red rubber to run through the pink and show in the anterior gum.

Respectfully submitted,

L. L. Dameron, *Supervisor.*

Report of Treasurer was made as follows:

TREASURER'S REPORT.

Amount on hand last report	$ 88.34
Received for membership	180.00
Reinstatement	6.00
Dues	281.00
Note	100.00
Total	$655.34

DISBURSEMENTS.

Paid superintendent clinics at High Point	$ 20.37	
For books and stationery	3.20	
Treasurer's bond	5.00	
For prosecuting illegal practitioners (legislative committee)	297.21	
For operating chairs	69.95	
Secretary's salary	50.00	
Secretary's expenses	34.41	
Treasurer's salary	25.00	
Treasurer's expenses	1.70	
Note	100.00	
Interest on note	2.87	
Total		609.76
Balance on hand		$ 45.58

JUNE 28, 1907. R. M. MORROW, *Treasurer.*

Dr. Everitt moved that the Proceedings be not published this year, and that the money so saved be used to further the prosecution of illegal practitioners. The motion was carried.

On motion of Dr. Norris it was ordered that the Secretary have printed a roll of the members of the Society, and that a copy be furnished the members.

The following members were suspended for non-payment of dues: Drs. W. Ross Davis, L. A. Hauser, E. C. Viton, and N. M. Culbreth.

Dr. J. M. Fleming asked that a committee be appointed to look over the expenditures of the Prosecuting Committee, and Drs. Johnson, Hunt and Betts were appointed.

The report of the Prosecuting Committee was then read as follows:

REPORT OF PROSECUTING COMMITTEE.

Your committee, appointed to prosecute illegal practitioners throughout the State, begs leave to submit the following report:

I have succeeded in convicting five men in different sections of the State—two in Harnett County, one in Sampson, one in Cleveland and one in Surry. I have also been instrumental in having at least three men leave the State to avoid prosecution. At first it was difficult to convince them that the State Society had really taken hold of the

matter. They seemed to think that it was personal spite on my part, but that idea has since given way to a more wholesome regard for the dental law of the State.

The cost of the Society has been $284.63—greater than I would have liked for it to have been, but some cases have been vigorously contested; one, that of State against Hicks, having been carried through the Supreme Court. That one case was the most expensive, costing us more than one hundred dollars, besides about twenty-five dollars that the dentists of Shelby paid out of their own pockets towards the attorneys' expenses.

The work has not been easy nor pleasant. More men have been reported than you would imagine, but so far no case that we undertook has been lost. One hundred and twenty-five letters have been written and two days have been required out of my office.

Generally speaking, I have had the active co-operation of all the members, and whatever credit is due for the work accomplished belongs to those, who, forgetting themselves, but remembering their duty to the Society, have not hesitated to report violators wherever found. There have been exceptions to these—some who knew of violations, but from false notions would not report them, that they might be prosecuted; and one or two men have expressed themselves as regretting that certain men had been convicted, giving as their reasons that they were "nice fellows." I have tried to perform my duties conscientiously, but without malice toward any man.

The result of our work has been far-reaching. Inquiries have come from other States, and they are taking it up. Inquiries have been received from South Carolina within the last few days, asking that copies of briefs and opinions be sent them.

I think it best, in making my report, to give the names of those convicted, and a short sketch of the circumstances of each conviction, not for the purpose of ridiculing them, should any of them happen to be present, but it is a matter of record, and the Society should know about each case.

I first started out by employing local attorneys to prosecute, but found that it did not work well. In some way the men were warned of a coming prosecution and stood not on the order of their leaving. After consultation with the full Executive Committee, it was decided best to employ one lawyer, furnish him mileage and send him wherever we needed him. Mr. B. C. Beckwith was appointed, and since that time we have had no trouble in having them arrested when wanted.

The first conviction was that of A. J. Adams, of Wake County, practising in Harnett. Adams attended a college in Richmond, but failed to graduate. He also failed before the board a few years ago. He was reported to me, and I went to Lillington and swore out the warrant against him and employed an attorney. Adams was arrested a few days later at Angier and claimed the right to go before the

nearest magistrate, submit his case and be fined. The deputy, not being up on the law, allowed it. He was fined $25.00 and costs in the case. He continued a bushwhacking practise, and on two other occasions I was near catching him, and finally, at Aberdeen, was so near catching him that, I am informed, he left the hotel between the suns and was last heard of in South Carolina. Any information concerning him will be gladly received.

The second conviction was that of Dr. Claude N. Hughes, of Hillsboro, practising at Duke, N. C., and practising with a member of this Society, Dr. Malone, of Goldsboro. Dr. Hughes lacked one year of having completed his course in Atlanta. He was reported to me, and I employed counsel at Dunn, N. C., to prosecute him. He claimed to be an assistant to Dr. Malone, but, as the law does not provide for an assistant without license, he was convicted and taxed with the costs in the case.

The third case was that of Egbert Watson, of Clinton. It seems that he had attended one course of lectures, but of late had been running an office in Clinton, claiming to use his brother's name, his brother being a licensed dentist living at Carthage. The magistrate did not see the law that way, and he was convicted. A few months later he was reported to me as having again begun to practise, boasting that he could pay the fines as put upon him and then make money. To meet this emergency, a batch of warrants were sworn out against him; and whereas in the first case judgment had been suspended on his positive agreement with his attorneys to discontinue practise, in the second case the full penalty was put upon him, and he has given up the practise.

I might state here that the law as passed by the last Legislature makes a second conviction a misdemeanor and fixes the punishment at fine and imprisonment, so that will put an end to second prosecutions.

This case and the one reported of Dr. Hughes, at Duke, should convince all as to the meaning of the law on using some other license than your own. Dr. Hughes claimed to be an assistant of Dr. Malone, claiming to collect no money himself for the work, all being paid to Dr. Malone, yet having his own chair and apparently doing the same amount of work. Of course, the question was not one of whether he had received compensation for his work, but whether or not he had license, and, having none, he was convicted.

Watson likewise claimed that he was practising on his brother's license, and he, too, was easily convicted.

I mention these things because it has come to me from reliable authority that there are men in this Society who allow young men to travel about in the country using their names and claiming to be practising on their license. They have no more right to practise than a barkeeper with a license to run a bar at Hamlet would have to open one at Raleigh.

It has also come to me that some members of this Society keep extra chairs in their offices and hire unlicensed men to operate for them; and it is my firm belief that a dentist who becomes a party to it is accessory before the fact and should be turned out of the State Society.

The fourth case was one against Dr. R. R. Folger, of Mt. Airy, and a very aggravated one. It seems that against his personal character there is nothing, but he had violated the law for years, and, although he had been indicted, his popularity had served to keep his case from ever being heard in court. It would be called and his bond declared forfeited, but, it seems, was never collected. He was reported to me, and Mr. Beckwith was sent to prosecute him. He (Beckwith) was present at a term of court at Dobson, and, although Dr. Folger was not present, he had a process of law served which put a stop to his illegal practise. The defendant was called and failed, the judge ordered *capias* to issue and fixed his bond at $500.00, making the entry in his own handwriting, whereupon his attorneys gave up. I will do Dr. Folger the justice, however, to say that he has attended the last two sessions of the Atlanta Dental College and comes before the board at this meeting for license. At the last term of court he was ready to submit and pay the penalty, but it was thought best to continue his case until he had secured his license, and that if he did that, with no further illegal practise on his part, he should be allowed to submit his case and pay the penalty.

The last case—that against Dr. Hicks, of Cleveland County—has been the most stubbornly fought, and, wonderful as it may sound, both sides won. In this case Dr. Hicks was an offender of long standing—a sanctified holiness preacher, one who could do no wrong. He tried for license before the board in 1889 and failed. He immediately began the practise of dentistry, just as if he had obtained license, and had kept it up ever since. Dentists who have lived in those counties surrounding him had suffered from his illegal practise for years, and on one occasion, when they finally brought him before the court, he entered a plea of *nolo contendere*, agreed to quit, and was allowed to go. In a short while he began to practise again, and, although they again indicted him, they were unable to bring the case to a conclusion. This is the point where your Prosecuting Committee found it and took hold of it. Mr. Beckwith was sent to Shelby and a new case was started against him before a magistrate. He was convicted, but appealed to the Superior Court. In this court he was again convicted, but he again appealed, and his case was carried to the Supreme Court. His contention before the Superior Court was that he had been practising prior to 1879 and so had a right to practise. Our contention was that he had no license, had never registered and had no right to do so. When the case came to the Supreme Court they decided that he had been legally convicted, but they went a step further and said that if he really had been practising prior to 1879 he

had a right to establish that fact and should be registered. This was a fact that he never had established, and one that we were ready to dispute at every point, confident of ultimate success. Immediately on the decision of the Court he filed with the secretary of the board his affidavit, unsupported by any proof whatsoever, stating that he had begun prior to 1879; and in spite of the fact that he was only eighteen years old in 1879, in spite of the fact that the Supreme Court said he must furnish proof, in spite of the fact that good men in the Society would swear to the contrary as to the time of his beginning, and against the advice of the attorney, Mr. Beckwith, who had had charge of the case, the secretary saw it differently and registered him, over the protest of the Prosecuting Committee. In correspondence with Dr. Jones, and in conversation over the 'phone, I told him that it was a knotty problem, but that if he would only refuse to register him, thereby forcing Hicks to bring a *mandamus* to compel us to register him, all these points would come out in the hearing before some judge at chambers, and we had no reason to fear the outcome; but Hicks' lawyer threatened to bring suit for damages if we delayed the matter at all, and so he was registered.

I suppose I should not feel as I do about it. I was appointed to prosecute those who had no license. He had none, and so was convicted. My duties probably ended there, but I feel keenly the loss of this case, and my sympathies go out sincerely to those dentists of Shelby and surrounding country who have borne the brunt of the battle and who now feel the shame of its final outcome.

In conclusion, I do not feel that the work of prosecution should stop. A few more convictions and the trouble will end, for a generation at least.

I hereby pledge my earnest support to my successor in the work, and respectfully ask that a committee be appointed to examine my expenditures, so that the Society may know how its money has been spent.

Respectfully submitted,

J. Martin Fleming.

Raleigh, N. C., June 20, 1907.

After a very lengthy discussion on the Hicks' case by Drs. Jones, Fleming, Osborne, Ware, Johnson and others, on motion of Dr. Everitt the Prosecuting Committee was instructed to consult eminent counsel, and if in the opinion of that counsel it was thought that we had a good case, that we proceed to prosecute Hicks for perjury. The motion prevailed.

The committee appointed to examine the expense account of the Prosecuting Committee reported that they had examined same, and that they were found correct.

On motion of Dr. Everitt $5.00 was added to the expense account of the committee to cover individual expenses.

On motion the report was accepted and the thanks of the Society extended to the committee.

On motion the Treasurer was authorized to borrow such sum as might be necessary to prosecute illegal practitioners.

On motion of Dr. Ware the Society returned its thanks to Mr. Robert Foster, of the Norfolk and Southern Railroad, and to Colonel Morton, of the Atlantic Hotel, for courtesies and kindnesses shown.

On motion the usual $5.00 fee was allowed the janitor.

The officers as elected were then installed, and the President, Dr. James, appointed the following committees:

Executive—Drs. D. E. Everitt, J. N. Johnson, J. W. Carlton.

Supervisor of Clinics—Dr. I. W. Jameison.

Ethics—Drs. Ware, Patterson and R. L. Carr.

Prosecuting Committee—Dr. J. Martin Fleming.

On motion a vote of thanks was tendered to Dr. Frank Staton for courtesies shown the Society while in Morehead.

With a short prayer and the benediction by Rev. Mr. Battis, the Society adjourned *sine die.*

New members elected at Morehead in 1907:

S. E. Douglas
Edward Green
R. O. Apple
Normal L. Overstreet
R. M. Huntley
L. P. Baker
C. L. Martin
W. H. Brown
W. G. McAnnally
Troy O. Apple
C. N. Hughes
C. S. Caldwell
E. G. Click
A. P. Read
J. H. Dreher
W. F. Clayton
B. D. Carl
A. S. Cromartie
P. D. Sinclair
S. P. Purvis
F. E. Hearn
E. G. Lee
R. R. Folger
S. C. Ford
F. D. Carlton
G. I. Lewis
H. L. Mann
J. C. Johnson
Z. V. Parker
S. H. McCall

Names of applicants who passed Board of Dental Examiners in 1907:

Apple, R. O., Madison, N. C.
Apple, T. A., Madison, N. C.
Baker, L. P., Kings Mountain, N. C.
Berryhill, A. M., Charlotte, N. C.
Brown, W. H., Asheville, N. C.
Caldwell, D. S., Concord, N. C.
Carlton, F. D., Statesville, N. C.
Clayton, W. F., High Point, N. C.
Click, E. G., Elkin, N. C.
Corl, A. D., Concord, N. C.
Cromartie, A. S., Clarkton, N. C.
Douglas, S. E., Raleigh, N. C.
Folger, R. R., Mt. Airy, N. C.
Ford, S. C., North Carolina.
Greene, Edward, Lagrange, N. C.
Hearn, F. E., Sylva, N. C.
Hughes, Claude W., Cedar Grove, N. C.
Huntly, R. M., Wadesboro, N. C.
Johnson, A. H., Durham, N. C.
King, P. V., Oakville, N. C.
Lee, E. G., Clinton, N. C.
Lewis, G. I., North Carolina.
Mann, H. L., Middleton, N. C.
Martin, C. L., Madison, N. C.
McAnnally, W. G., Richmond, Va.
McCall, S. H., Marion, N. C.
Overstreet, W. L., Whitakers, N. C.
Phelps, D. R., Scotland Neck, N. C.
Purvis, S. P., Hamilton, N. C.
Read, A. P., Mt. Tirzah, N. C.
Reece, R. W., Elkin, N. C.
Rogers, R. G., Apex, N. C.
Sinclair, P. D., Asheville, N. C.

Thirty-Fourth Annual Meeting

OF THE

North Carolina Dental Society

HELD AT

Charlotte, N. C.

July 1-3, 1908

The thirty-fourth annual meeting of the North Carolina Dental Society was called to order at Charlotte on Wednesday, July 1, 1908, at 8.30 o'clock P. M. by the President, Dr. D. L. James.

The session was opened with prayer by Rev. H. K. Boyer, D. D., of Charlotte.

Mayor T. S. Franklin delivered the address of welcome in behalf of the city of Charlotte, and Hon. E. R. Preston in behalf of the Greater Charlotte Club.

Dr. J. N. Johnson responded to the address of welcome.

The reading of the minutes was postponed till the following day, and the address of the President, Dr. James, was read as follows:

PRESIDENT'S ADDRESS.

Dr. D. L. James, Greenville, N. C.

Members of the North Carolina Dental Society, Ladies and Gentlemen:

When, in 1883 (just the quarter of a century ago), I received a diploma from the dental department of that most splendid and time-honored institution, the University of Pennsylvania, I thought that was the happiest moment of my life; but as I stand here to-night in this historic city, the Queen City of North Carolina, to preside over this, the largest, handsomest and the most intelligent body of dental

surgeons that ever assembled in the Old North State, my heart swells with pride within me. I am just as happy as Will Kitchin was when he was nominated for Governor in this very city last week. The beautiful and wonderfully progressive city of Charlotte has opened wide her gates and her arms, and most cordially and eloquently welcomed us and bids us God-speed in the great work in which we are engaged—a work which leads to the highest ends in life—the alleviation of human suffering and the promotion of the usefulness and longevity of mankind.

A year has sped by on the wings of eternity since the last meeting of our Society, and how thankful we should be to our Creator that death has not invaded our ranks since our last meeting. Yet, while our membership has remained unbroken, North Carolina has lost one of her most accomplished and talented dentists, Dr. B. F. Arrington, of Goldsboro, who was one of the most active men in the organization of the North Carolina Dental Association (which name was changed to the North Carolina Dental Society), which met and was organized at Beaufort on the 11th of August, 1875, with thirty-four members, and he was unanimously elected its first president. While Dr. Arrington was not a member of our Society at the time of his death, I am quite sure that no one in our Society will gainsay me when I state as my belief that the profession of dentistry in North Carolina is under a heavy debt of obligation to Dr. Arrington, not only for the splendid work he did in our organization, but for his many contributions to dental science and art. I think it not amiss that our Society should not only take cognizance of his death, but also of the death of Prof. W. D. Miller, which occurred in Newark, Ohio, on July 27, 1907. Professor Miller was the most brilliant exponent of dentistry the world has ever seen. In his death our State, our nation and the whole dental world suffer a great (I am almost tempted to say irreparable) loss. The death of that man was like the falling of some giant tree, after which the forest could never again be quite the same.

Since our last meeting it was my good fortune to attend the Jamestown Dental Convention. That was truly a great meeting, and our State was greatly honored in that convention by having our beloved Dr. V. E. Turner the active president; and I am glad to say that our State was largely and well represented in that great gathering of dentists. That is not the only time during the year that Dr. Turner has been honored. I, as president of the North Carolina Dental Society, attended on May 21st a very enjoyable golden anniversary banquet, given by the Raleigh Dental Society on the fiftieth anniversary of his graduation. The invited guests of honor on that occasion were the president and secretary of our State Society, the members of the State Dental Examining Board and Prof. Charles R. Turner, of the University of Pennsylvania.

I have only a few recommendations to make to the Society, and will make those as briefly as possible, for my good and wise friend of the

Executive Committee, Dr. J. N. Johnson, wrote me some time ago: "James, for God's sake, don't make your address too long." Now, gentlemen, you all know that when the Executive Committee speaks, everybody, from the president down, must obey.

As you are all aware, the proceedings of our meetings for the past two years have not been published, as it has been necessary to use the money of the Society for other purposes. I urge that they be published this year, including a synopsis of the preceding meetings that have not been published. We should have a committee appointed each year by the president, known as the Press Committee, whose duty it shall be to see that the proceedings of our meetings are properly reported to the press. I have observed a need of this for many years, notably at our last meeting, at Morehead, when the proceedings of the first two days were sent to *The News and Observer* by some member of the Society, after which not a line was sent to that paper from our meeting.

I think that we should have an Educational Committee to confer with the State Board of Education and the Superintendents of Public Instruction in the different counties, with a view to co-operating in securing more and better dental instructions in the public schools in the State. This expression has become almost axiomatic.

"What we wish introduced into the life of the nation must first be introduced into its schools." "Educate the people," was the first admonition of Penn to the colony he had founded. "Educate the people," was Washington's richest legacy to the nation. "Educate the people," was the unceasing exhortation of Jefferson. In the future our efforts for improvement must be directed largely to the masses, in order that the educational aspect of our profession may keep pace with the material and manipulative advancement.

You have been welcomed by the honorable mayor of the city; you have been welcomed by the Greater Charlotte Club; and now I, as the official head of the North Carolina Dental Society, thrice welcome each and every dentist present. I especially welcome those who have come from other States to be with us on this occasion.

I invite and welcome any members of the medical fraternity to our meetings. I invite and welcome any members of the press to our meetings; and last, but not least, I extend a hearty welcome to you, ladies and gentlemen, to attend the meetings of this, the thirty-fourth annual meeting of the North Carolina Dental Society. And I hope you will all find the meeting both pleasant and profitable. I trust that we of the dental profession especially will strive to improve the opportunities presented, and that this week will be so full of inspirations and valuable results that it shall be a milestone in the march of dental professional progress in our State.

The address was referred to a committee consisting of Drs. H. V. Horton, Hunt, Smithson.

Dr. Everitt, on behalf of the Executive Committee, invited all ethical men to join the Society, and also moved that Dr. Daisy McGuire be elected to honorary membership, she being the only lady ever applying for license to practise dentistry. The motion prevailed.

Dr. Chas. A. Bland invited the Society membership to visit the rooms of the Colonial and Manufacturers' Clubs.

The Society then adjourned.

JULY 2ND—MORNING SESSION.

Minutes of the previous meeting were read and approved.

The report of the Prosecuting Committee being called, was read as follows:

REPORT OF PROSECUTING COMMITTEE.

I have the following report to make:

During the year just closed I have prosecuted three men for practising without license and have convicted three.

The first case was that of Dr. J. L. Dowd, practising in Moore County. He was a graduate of dentistry, but had never obtained license in this State, though he had license in the State of Georgia. However, he did not offer that as an excuse, but submitted his case and was fined $25.00 and costs.

The second case was against one Dr. G. R. Moore, of Rutherford County, who was open in his violation of the law, even going to the extreme of inserting his professional card in the county papers. He made a show of fighting the case, but when he found that we meant business he decided to submit his case. He, too, was fined $25.00 and costs.

The third case has been a more aggravated one and has been more bitterly fought. In this case the defendant was one Dr. J. R. Nichols, of Columbus, Polk County. He was reported as practising without license, and the suit was started against him. As soon as he learned that the suit had been started against him he immediately filed with the secretary of the board an affidavit setting forth that he should be registered, because he had begun the practise of dentistry prior to 1879. We had no evidence at that time to prove to the contrary; but even if it was true that he had a right to registration, our claim was that he had never exercised it, and therefore had no license. We also

succeeded in convicting him, and brought out in the trial that he was only a seventeen or eighteen year old boy in 1879—proved it by his sworn statement on the tax books of his county—and when confronted with it he didn't know how old he was; had forgotten, if he had ever known.

The cost to the Society in these three cases has been $67.29.

Just before adjournment at the last meeting of the Society, when there was some controversy as to right to register one J. J. Hicks, of Cleveland, it was stated on authority that he was believed to have sworn falsely in his affidavit, in which he claimed to have begun practise prior to 1879, and the prosecutor was authorized to consult counsel, and if we had a good case that we indict him for perjury. Those instructions were followed. We first indicted one of the Hicks witnesses for swearing falsely in the original trial, and we so frightened him that he made a written retraction of everything he had sworn to. Then suit for perjury was brought before a Cleveland County magistrate against Hicks himself. He succeeded in having it moved before another magistrate, who was so manifestly unfair in his rulings towards us that he even refused to hear our lawyers argue the case. We had good witnesses to prove that he had not begun prior to 1879, and he had only one who swore that he remembered well that he was practising prior to that time; and yet this same witness, on cross-examination, as I am told, absolutely could not remember the time of his own marriage, but his evidence convinced the magistrate, and the case went against us. Now, since that time, Hicks has gone to Catawba County and brought civil suit for damages against myself and the Shelby dentists, and another suit against myself and the Cleveland magistrate before whom the papers were sworn out. His bill of complaint has not yet been filed, so I cannot tell what will be set forth. Summons was served in both cases only a few days since. I mention this in detail, that the Society may take whatever action it may see fit. This case has cost $76.75.

Not so many complaints of illegal practise have come in this year, and most of these come from the more remote sections of the State. It looks like a stop is being put to the habit and that the law is being recognized as supreme.

A few cases are still being looked into and additional evidence secured, but a full report on these would injure our chances of success.

I append a small expense account, covering stationery, postage, notary fees, etc. Respectfully submitted,

J. Martin Fleming.

Dr. Everitt moved that the report be received and a committee be appointed to audit the accounts of the Prosecutor. Motion was carried.

In connection with the report of the Prosecutor Dr. Everitt introduced the following resolutions:

WHEREAS, in the regular discharge of his duty as put upon him by this Society, the prosecutor has had this case brought against him and against the other members of this Society; and whereas, the magistrate before whom it was tried failed to give us, as we think, a fair hearing; and whereas, we believe we have a good case, and that the loss of it in this way means much to the legal status of dentistry in North Carolina; therefore, be it

Resolved, That the Society do appoint a committee of three discreet men, who shall be empowered to employ such counsel as they may deem proper to successfully conduct the case.

Resolved, further, that the Treasurer of this Society shall borrow such funds as may be needed to meet such expense, provided the regular funds in his hands are insufficient.

In connection with the adoption of the resolutions Dr. Everitt also moved that a committee of three be appointed by the chair to have full charge of the case. Motion was carried, and Drs. W. B. Ramsay, J. N. Johnson and D. E. Everitt were appointed.

The chair appointed to audit the Prosecutor's accounts Drs. Smithson, Norris and Lynch.

On motion of Dr. Everitt Dr. Cara C. Collins, of Atlanta, a lady practitioner, was made an honorary member of the Society.

On motion of Dr. A. H. Fleming the exhibitors were asked to close their exhibits during the hours of the session.

Dr. Turner announced that the Examining Board had received the resignation of Dr. C. A. Bland as a member of that Board, same to take effect on July 10th.

The regular order of business being taken up, the following paper was read by Dr. T. A. Apple:

THE PRACTICAL KNOWLEDGE OF THE CHEMICAL CONSTITUENTS OF SOLDERS, AND THEIR APPLICATION TO METALS.

DR. TROY A. APPLE, WINSTON-SALEM, N. C.

Mr. President and Members of the North Carolina State Dental Society:

Metallurgy, as related to dentistry, is growing more important every day, and the apparent inability for me to do justice to the subject in such a short paper is evident; still I am truly glad to bring before

you a few practical points relative to solders and their application to metals in the construction of crown and bridge work.

Alloys of gold plate used for the construction of artificial dentures should be of such fineness that they will resist the chemical actions of fluids of the oral cavity, while at the same time they should possess the requisite hardness, strength and elasticity.

The properties are conferred by the addition of copper and silver or either of the metals, or by copper, silver and platinum together, bringing them to any required carat of plate desired. The usual and most universally used plate for the construction of crowns is of a standard gauge and fineness (22 carat x 29 and 30 gauge), which can be had in two shades. The very light plate is non-oxidizable and is considerably softer than the dark plate. This is alloyed with silver, principally, the property of which renders it more malleable than copper and produces a light shade. I find this plate preferable for crowns that require considerable burnishing to the tooth, such as open-face crowns.

The dark plate is alloyed with copper, principally, the properties of which give it a more reddish and richer-looking shade, being almost the shade of 24 carat plate and much harder than the light shade. This dark plate is oxidizable, although the oxid can be readily removed by pickling.

For backings and cusps 24 carat by 34 and 36 gauge is more universally used than thicker plate, it being more easily burnished in place and copying finer lines for the cusps. The writer finds 34 gauge best in all cases. Platinum 38 and 40 gauge is also used for backing by a great many dentists, although I have never found any advantage in using it; in fact, it occurs to me as being a disadvantage, as it is impossible to swage or burnish platinum, even when annealed in a muffle into as accurate contact with the surface of the facing as pure gold, hence leaving small crevices for borax to run. The higher fusing point of platinum counts for much, but absolute contact obtained by pure gold is decidedly preferable.

The solders we use in dentistry are always lower carat than marked on the piece. Twenty-two (22) carat solder is not 22 carat fine—only about 20 carat—and is marked on the piece, "For 22 carat plate," and so on down to the lower carat solders.

I think a great mistake is made in using low carat solders, especially where we are soldering to porcelain facings. The lower grades, or so-called "easy flowing" solders, have a greater amount of zinc in them, which gives the above property; but, while reducing the fusing point, it adds greatly to oxidation, hence calling for more borax and increasing the danger of porcelain cracks from an excess of flux. Further, the affinity of zinc for pure gold or platinum backings develops with bad results, as the lower-grade solders are easily reduced by successive layers to a fusing point common to the whole mass, when the backing burns out, exposing the porcelain and producing an im-

perfect piece. The surface of lower-carat solders is apt to be pitted with small holes and will not have the solid and uniform appearance that is desirable for a neat, sanitary piece of work.

A solder should possess the quality of flowing freely, but as high carat as the attainment of the property of the metal will permit, and thus sufficiently resist the actions of the fluids of the mouth. For a 22-carat plate I solder all bands, cusps and pins with 22-carat solder and fill in with 20-carat solder. In case of single-shell crowns on molars, I fill in cusps with 18-carat solder, which, I think, gives you a harder and more resistible surface to the heavy strain of mastication. In many cases of repair work we are called upon to use the lower-carat solders, not knowing what the former piece was soldered with.

The conditions for successful soldering are: first, contact of the pieces to be united; second, a clean metallic surface, over which the solder is to flow; third, a freely flowing solder of proper fineness used in minimum quantities; fourth, proper amount and distribution of heat and flux.

Contact of the pieces to be united is of great importance; and if any defects of this character are found to exist after the piece has been invested and wax melted out, they should be remedied by filling such spaces and crevices with pieces of pellet and foil gold, for which purpose I use refused and little pieces that drop on the floor while making gold fillings. These little pieces, saved and thus used, in many cases prevent rough-looking joints and spaces, and in addition are a great protection to porcelain facings from borax.

Cleanliness must always be strictly observed, as this is one of the most important factors towards successful soldering. All parts to be soldered should be carefully protected from any contact with plaster of paris or investment, as this will greatly retard the union of the parts and impair the strength, utility and sanitary properties of the piece.

The larger the bulk of metal, the greater the expansion under heat and contraction in cooling; hence the smallest amount of solder should be used that will meet the requirement for continuity and stability. If this precaution is carried out, we will have the smallest possible portion of the alloy exposed to the oral fluids, while at the same time avoiding the danger of fracturing porcelain facings by the contraction in cooling of an excessive amount of solder.

The application and management of heat in the operation of soldering are matters requiring both care and judgment. In the first place, the temperature should be raised very gradually to avoid the fracture of facings by too sudden expansion of the metal. The best method for heating up a case is to place it on a gas oven, such as we have in our laboratory for heating flasks, etc. A rim of sheet iron about six inches in diameter and two inches high should be placed around it for the purpose of holding the charcoal, which, in small pieces, should be

built around the outside of the case, so that it may be uniformly heated. The gas jets should be turned on gradually, giving about thirty minutes to reach the proper temperature for soldering, when the case is lifted from the gas oven and placed on an asbestos block. Then take some of the hot coals used in heating up the case and place around the investment. This will prevent too rapid cooling of the piece, should any delay in soldering occur. With careful manipulation of the blow-pipe, first using the brush flame, then the reducing flame, by which we can carry and control the solder to any point, we will find our soldering comparatively easy and successful to some that are entangled by many vexations. After the soldering operation has been completed, leave the investment piece on the soldering block, so that it may cool gradually, lessening the danger of fracture of facings by a too sudden contraction of the metal.

There are a dozen different kinds of formulas for flux, but I do not think there is any that can equal the regular block borax mixed to a creamy constituency with a little water on the soldering slab. Great caution should be taken not to use an excess of borax, as every particle applied to the surfaces to be soldered and that on the solder will not, if imprisoned in the metal and forming pits, be found on the surface of the work and in the adjoining investment edges, thereby rendering the facings more likely to be fractured.

A little fine borax mixed with white petroleum jelly I find a very fine medium to use on small pieces of solder, when soldering bands, cusps, pins, etc., to prevent the small pieces from falling off. The petroleum jelly has no virtue whatever as a flux, and I am sure it does not affect that property of the borax. It readily burns off and leaves the borax on the metal, holding the solder in place.

For investments I do not know of any material better than one-third pumice stone and two-thirds plaster of paris. This makes a good, strong investment that is easily trimmed to access of points to be soldered, and is not so apt to chip and crack as many other investment materials.

I am aware that I have not told you anything new, but if even repeating these obvious facts has served to make one of the brother practitioners more alert to guard against possible defects of manipulation, I feel amply repaid for a little time and trouble in writing this paper, and am sure that I shall derive much benefit from any discussion that may follow.

The paper was discussed by Drs. Watkins, Brooks, A. H. Fleming, Everitt, Apple.

The next paper was read by Dr. C. B. Hall as follows:

A FEW THOUGHTS FOR YOUR CONSIDERATION ON RUBBER PLATES.

Dr. C. B. Hall, Goldsboro, N. C.

I hope you will all bear with me for a short while and let me annoy you just a little on that dry old subject, rubber plates. Now, my brethren, I know some of you do very little or no plate work; but, be that as it may, some of us very common dentists have it to do, or be idle at times.

The first case I wish to call your attention to is, we will say, Case No. 1. A gentleman acting as traveling salesman came to me and could not make me understand his name until he had removed his plate, which was a partial upper, after which he pronounced his name very distinctly. He then asked if this difficulty could be overcome, as it was a source of great annoyance to him in his work, for he had to be continually introducing himself. After locating, as I thought, the source of trouble, I told him I thought I could remedy the difficulty, and proceeded to make him a new plate. About the only change of importance that I made was to reproduce the rugæ on the rubber. When the plate was placed in his mouth he could pronounce his name distinctly, so Dr. Fleming and he both said.

The next case we will call Case No. 2. This was the case of a preacher, who, when he attempted to say *religion*, would say *leligion*. While possibly his congregation would fail to notice his mistake, yet he knew he made it, and this embarrassed him. Nor could he trill an "r." I made another effort to correct this man's speech by reproducing the rugæ and by using the Eureka suction (for his mouth was as flat as the palm of one's hand). Now he can trill an "r" and can say "religion" as distinctly as any man in this house.

So much for the reproduction of rugæ on rubber plates. If the absence of rugæ was not the trouble, what was it? And why could these persons articulate words after it had been reproduced which they could not articulate before? I am forced to believe that the natural rugæ has a function, and if it be not to assist in the articulation of sounds, what is it? And if this be the function, then should we not try to preserve it for our patients, instead of covering it up with a smooth piece of rubber?

In the next place, I would call your attention to that class of lower plates where there is scarcely a trace of ridge for the plate to rest upon. For several years I have used Weston's new metal for casting lower dentures, and I find this material proving a great boon to those who are unable to wear with satisfaction plates made of rubber. The weight in plates made of this material seems to hold them in place so well that almost anyone can learn to use them with less worry than they can rubber. Sometimes I use a cast metal base with rubber attachments.

Try these materials and methods, gentlemen, and see if you don't like them.

I do not profess to be a "king cure-all" and a "never-failing success." I make failures, and sometimes learn more by my failures than by my successes. I trust, therefore, that you will feel free to discuss this subject and to criticise my remarks. The better we, as individuals, do our work, the better our profession as a whole becomes. Our work is for the relief and benefit of mankind. If what I have said shall aid any of you to greater success, I shall be only too well pleased. If you have methods superior to mine, I would be glad to know and to adopt your plans for the benefit of all.

Paper was discussed by Drs. Osborne, Johnson, Fleming, J. M., Crenshaw.

On the subject of Operative Dentistry Dr. A. H. Fleming read the following paper:

CAST GOLD TECHNOLOGY.

Dr. Arthur Hynes Fleming, Louisburg, N. C.

Dental surgery, the most scientific of all specialties of the great science of human life, is ever restless in its ambition for human welfare, and it is to this restlessness and ambition, combined with the untiring energies of the most skilled scientists of the modern world, that human comfort is debtor. At regular intervals in the history of dentistry have come men with new devices and new theories and laid their ambition and possibly their life's work on the altar of scrutiny—some to see their ideas accepted, some to see them discarded as time and experience have proven their worthlessness and impracticability. To-day the science of dental surgery has upon its altar of scrutiny cast gold, and the research and experiments of certain men in this particular branch of prosthesis have proven to the profession their usefulness and permanency.

Since Alexander first demonstrated the principle of the gold inlay, there have been many to take his ideas as the basic principle and forge out many valuable additions which have been time and tissue savers. The most valuable adjunct to the Alexander inlay is the Taggart principle of casting, and it is to these two principles that every dental surgeon should make his bow of professional gratitude, and incidentally to the men behind. The Taggart system of construction is a great time saver, and, to my mind, is the safest, most economical and most accurate method of making inlays or crowns. The ways of doing the same thing different ways, and different things the same way, are, with the aid of this principle, almost innumerable. Anything that can be made in wax can be reproduced in gold. There are

different mechanical devices for doing this casting, and I shall not discuss the advantages of any of them, but will say that anyone that will satisfactorily produce the desired results should be a satisfactory device, as the casting principle in them all remains constant.

The first thing to consider in making an inlay is whether to cut or separate. This is discretionary with the operator, but in most cases the more of the tooth is preserved the stronger and more esthetic will be the construction of inlays and crowns.

The secret of success in dentistry is that much-discussed principle known to our *clientele* and their large circle of friends as the staying-in property. The durability and permanency of the finished result is the first thing to consider when a case is presented. The strongest retention is the best, and, with the possible exception of the almost obsolete shell crown, is the pin or spud retention. The retention secured in the fissures and sulci of bicuspids and molars to support inlays in the anterior and posterior proximal cavities is a strong retention, and is probably one of the strongest, provided the angles in the sulci are properly cut.

In anterior teeth, when the cavity is a simple proximal one, it should be cut as deep as consistent and flat-seated. If the proximal wall is gone and the cavity extends to and involves the incisive edge, the inlay is strongest when it is made to extend across or partially across the remaining portion of the incisive edge. This is done by beveling the incisive edge from before, beckward and upward, or downward in the case of lower teeth, and putting a small pin in this portion of the inlay at some point in the tooth furthest from the pulp. This bevel may be in the form of a groove or a flat surface. When only the simple proximal inlay is made, the bulbous interior of the wax may be made hollow or a groove may be carved in the wax to extend around that portion of the inlay without disturbing the apposition of the inlay to the margins or to the seat of the cavity. After the space desired is secured and the cavity properly shaped (this ever being done with the view of easy drawing), the first step is to get an accurate impression of the cavity in wax or paraffin.

There are many kinds and colors of these casting waxes, but in my own experiments I have found the pink paraffin very satisfactory. The cavity is, of course, to be wet or oiled, so as to render drawing easiest, and the wax is warmed and pressed firmly into the cavity; the patient is asked to bite into the soft wax, which will force out the excess and give the proper occlusion. The wax is then cooled and trimmed down to the margins. Never try to trim wax to the margins until it has been thoroughly cooled, as you are almost sure to cause it to draw or pull away from the margin on the opposite side. When properly cooled, a flat instrument is used to trim off the excess. The instruments vary in shape from a handy penknife to a stiff wax spatula, flat burnisher or, in fact, any instrument that seems to suit the hand.

It is often well to put some separating material between the teeth when the proximal surface is to form a part of the inlay, especially if the cavity extends to the cervix. Celluloid strips or matrix metal may be used for this purpose. It is often hard to smooth the wax at the cervix, especially if the cavity extends under the gum, on account of the difficulty in getting instruments to that part, and you will find it a great help to stretch a strip of rubber down across the wax and around the tooth and exert a pulling force, which, with the aid of a flat instrument, will pull the wax flat into the cavity, forcing the excess over the edges of the margins in the shape of a thin film, which may be trimmed off while the wax is in place, or cut away when the wax is removed or even after the inlay has been cast. When you have gotten the desired margins and carven your articulation satisfactorily, you should again try the bite and relieve it just a little at the points of occlusion. The wax should always be carven cold, and chloroform or any other solvent to smooth it should never be used. To prevent the wax from scaling while it is being carved, it should be thoroughly fused or in one homogeneous mass at the time it is forced into the cavity. Should you lack wax in any part after it has been forced into the cavity, it must be removed, dried, and melted wax dropped from a spatula on that part, or you will find that it will scale when you attempt to carve, should you try to add more wax without melting it. After you have your bite as desired, and the wax is shaped just as you desire the gold to be, you thoroughly cool and remove the wax from the cavity with a fine instrument, taking care not to distort it in any way. The wax is held gently in the hand and the gate-pin or sprue-wire is warmed and stuck into some part of the wax. This should always be put into some convex part of the wax, so when the excess gold left in the gate is removed from the inlay its scar can be easily polished.

With the wax fused to the gate-pin, it is now ready to invest. The investment is made in a ring, tube, or thimble, by pouring soft investment compound into the ring or tube and immersing the wax in same. Upon the gate-pin is slipped a cone or gate former, which has a hole through its center to receive the gate-pin. The surface of the gate former is oiled and the gate-pin is put into the hole in the center with the wax toward the small end of the gate former. The wax is then painted with some of the investment compound, so as to avoid air bubbles when it is forced into the investment. A soft camel's hair brush is used for this purpose, as it is not apt to distort the frailest margin. After this is done, the wax, gate-pin and gate former are settled gently into the investment compound in the ring. The larger part of the gate former, resting upon the inner surface of the ring, holds the wax suspended in the center of the investment. This is allowed to set; the gate-pin and the gate former are removed, which leaves a cone-shaped gate leading into the investment and terminating in the wax. The case is heated slowly until the wax is burned out.

The case is then ready to be put into the machine to be cast. The gold in its molten state is, by some force, either gas, steam or centrifugal, thrown into and through the gate into the space left by the previously disappeared wax. It is then cooled, the excess cut away, and the case is polished. In some cases it is best to polish before the excess is cut off, especially when the case is small, as they are very hard to hold, and in polishing these cases your felt cones, brushes, etc., will run against your index fingers and thumbs and will produce what might be termed the "inlay finger." This is a hardened, deadened condition of the ends of the fingers, caused by the heat and friction from the revolving wheels and brushes, and greatly impairs the sense of touch, which is so valuable to the dental surgeon.

The process of making cast crowns and inlays is analogous. There are many valuable points in the construction of both that only present themselves in the course of experience. In large inlays or crowns it is often to advantage to fill the cavity almost to its margins, or to build a corner in some plastic material, in order to facilitate the removal of the wax, as by so doing you avoid getting the work too heavy. You will also find that you can get a given piece of work in a smaller space than if you have not built your cavity up. This you will also find to be a great saver of gold.

When the case is built up in a plastic material and you desire to have pins in the crown, or inlay, as the case may be, you should always be sure that there is enough wax around the pins to hold them firm and prevent them from being displaced in the investment. If you find the bite is close, you can countersink the holes in the teeth or the filling, and this will give additional strength to the pins in the body of the inlay. In a great many cases I have found the platinum pins from the teeth used in vulcanite work to be most excellent for this purpose. They may be put head in the tooth or head in the wax, just as you desire; but in case of head in the tooth it is best to scratch or scar the other end of the pin that is to be in the wax. Gold will absolutely weld to gold in the casting process, and it is by this method that we are able to fill matrices or cast gold upon bands and pins.

In most crowns where more than two walls of the tooth are missing it is always advisable to make a matrix of 3-1000 gold, according to the Alexander method, and strengthen the same with solder, and then flow the wax on the matrix. Soldering and strengthening the matrix is not necessary in all cases, but you will find your case can be held in its proper place in the tooth when the bite is made and the case is carved, and it will also permit of more satisfactory handling or carving out of the mouth. When the matrix is not used, the wax will have a tendency to revolve on the tooth while being carved. Cusps may be cast in shell crowns by adjusting the band and letting the patient bite in wax placed in the band. This is cooled, removed and properly trimmed.

In case of anterior teeth, nothing is prettier nor stronger than the crown cast with a porcelain face. The Logan or detached post crown, with a disk of wax around the pin, is pushed into place and the excess trimmed off, and when cast you have a perfect adaptation to the root. When a Richmond is made, the band is fitted, the pin put into the root and a facing or plate tooth is held in place by wax. The case is removed and shaped, and when it is cast it is a perfect fit.

In cases where porcelain is used it is not necessary to have pins in the porcelain, as the tooth can be so shaped as to be made fast without the aid of pins. The gold used in casting may be any carat that the operator is willing to put into the mouth. Pure gold is very soft and in most cases it is too soft, as it is so apt to be sprung or warped in polishing.

The secret of a successful cast is thoroughly melted gold. Should you make a cast and find that the gold was too cold to weld to a band or pin, but only conforms to it, the case is not ruined, but may be invested and soldered.

When you desire to cast on porcelain, the ring containing the investment must be very hot, so that the molten gold will not shock the porcelain when it is forced upon it and cause it to check, owing to the difference in the temperature of the tooth and the gold. Gold may be cast into a simple inlay without having the investment hot, but it is always best to have it heated, especially if the gold has a circuitous route. The crucible or investment may be overheated, which will cause gold beads or blisters on your inlay. These may be caused by air bubbles in the investment, and it is for this reason that you paint the wax with investment compound and settle it carefully in the same. Always avoid jarring or tamping, as that will drive the air bubbles (should there be any in the investment compound) against the wax. Gold cast too cold will show cold pores, even if it casts, or it may not cast at all.

Clean gold of any carat casts best, and if ever on gold of a lower carat you find a slag or oxide crust when you attempt to melt it, do not put borax or other flux on it, but take it to the soldering block, flux and fuse it thoroughly, put it in nitric acid until it is clean, and you will find that it will melt readily.

All cases should be examined carefully before trying them in, to make sure that all investment is removed, and any beads formed during casting may be cut away. Be sure that the cavity and pin holes are clean before trying to seat the inlay or crown. The cementing should be the same as in other cases, ever taking care to keep the case dry until set. The great majority of cases should be polished before they are cemented, but some may be polished or retouched afterward.

It is very hard to convey a scientific mechanical procedure of this kind to others, especially to those who are not familiar with the process, and but for the confusion I should pass the models of some of the cases which it has been my pleasure to discuss; but in a clinic

at this meeting I shall show the casting principle, the construction of crowns and inlays, backing teeth with cast gold, casting gold on pins, gold on gold, gold on porcelain, with and without pins and in pinless teeth. I shall clinic on my failures as well as my successes, and in so doing I claim nothing original, but only present a paper and a clinic which constitute a diary of my experience of more than two thousand cases of the numerous phases of cast gold.

Following this paper Dr. J. R. Osborne read his paper on practically the same subject:

SOME EXPERIENCES IN DENTAL CASTING.

Dr. J. R. Osborne, Shelby, N. C.

When Dr. Ottolengui, in the February (1907) number of the "Items," made his "glory to the Father" announcement of what Dr. Taggart had done for the dental world in working out a system of casting *perfect* gold inlays, I was very much impressed myself, that the time had come to mark a new epoch in dentistry. When Dr. Taggart made his second flutter before another one of our big dental societies, I was on the spot—Asbury Park, New Jersey—to see the man and his methods. I assure you the favorable opinion I had formed of the principle from the description in the dental journals, and by correspondence with a few of the leading advocates of the casting idea, was fully justified, and I was confirmed in the belief that the filling of teeth was destined to undergo a revolution. This I offer you as introductory to the subject, rather than a history of casting or a "praise offering" to the grand old man who has done so much for the alleviation of human suffering through the institution of this work.

My experience in this particular way—the *casting* of inlays—dates from the 21st of last December until this good day. I have long been an ardent believer in the inlay principle, and for several years have been employing the matrix way of constructing the different pieces of work when indicated in my practise. This method is simply one of *casting*, and that implies a mould, a molten metal and a means of driving this same molten metal into the mould. There is nothing new in the Taggart system but *the means of obtaining the mould*, but it is sufficient to bring to the dentist the possibility of the employment of a work that is destined to mean more to the profession, and through it to suffering humanity, than anything that has come to it since its inception. And William H. Taggart deserves the honor; and I, for one, think that in speaking of this work we should refer to it as the "Taggart system," or the "Taggart way," thus in a faint way showing our appreciation of a brother who has labored for the good of the profession, and whose labors have not been in vain.

Now, there is but one way to obtain this mould for the reception of the melted metal, and that is to prepare in wax a model of just what you wish in metal and invest in a material that will after crystallization stand heat without change. The wax melts and disappears in the investment when heat is applied, and leaves a mould that corresponds in shape, of course, with the model. I say, you must get your mould just this way, but when it comes to forcing the metal into the mould, "some say one thing, and some another." The possibility of driving the metal in different ways has brought out a score of machines, nearly all of which have a different principle. My experience as to machines is confined to the Taggart, the Kenyon, the Jameson, the Seymour, the Custer and one of my own construction. That means nitrous oxide gas, compressed air, centrifugal force, steam and explosion force. Looks like all this might drive it some. My experience, using these different forces, leads me to believe that the one who pins his faith to nitrous oxide, compressed air, clock springs or explosives to drive his hot stuff will wake up one of these fine days and find out that he is on the wrong road. But the text says "Some experiences in dental casting," and I'm going to get right down to the text and give you some of my experiences just as it comes to me, disjointed, disconnected, no doubt, minus a lot of rhetoric, but interesting enough, I hope, that all may get some little good out of it.

I know from experience that you have to get your metal hotter using nitrous oxide or compressed air than using steam. That I would not use the system if I had to melt the gold with gasoline and force the metal with nitrous oxide or compressed air. It might be altogether different if I could use the oxyhydrogen flame. That the moisture must all be out of investment, and in drying-out the heat must be sufficient to melt the wax, but I would rather that it should not boil or burn out. That the quicker you get your gold melted after you start the blowpipe, the better the cast, all things being equal. That it is not necessary that the cups be hot in casting, as I have had as good results with cold cups as hot ones. I don't mean that warm cups are wrong, but that hot ones are. That imperfect results generally follow in using a hot cup after it has been allowed to cool. That time and skill are *demanded* in the final work and finish of the wax filling. That the cavity must be shaped properly. To do this work successfully this point must not be slighted. That failures occur once in a while, and I hardly know who or what to blame. That a high-priced wax or high-priced investment is not necessary. That pure gold is not the only metal with which a perfect inlay may be made, Taggart to the contrary notwithstanding. That if you have one filling only to make, this is not the *quickest* way, but if you have as many as three or more, you have any other way "skinned" on the time question. It takes very little more time to make four or six than it does to make two or three. This implies that you have plenty of cups, numbered, and use common sense in pushing along. That

this work must cost the patient more, for more than one reason, but especially for the fact that ten dollars' worth of gold will not make more than ten or twelve hundred fillings. That one of the places where this work is most of all indicated is in placing fenders on dead molars and bicuspids that carry large alloy fillings from the mesial to the distal surfaces, which teeth split and—the bogy man gets them. That this principle in filling places the patient of moderate means in a position to pay for a really decent job of dentistry, as his dentist can use an alloy for back teeth that is far in advance, from almost any standpoint, of any amalgam filling. It you want to know the whys of this, I'll tell you, if you will ask me. That I have experimented plenty far enough to say to you that it is possible and easy to cast a plate on this principle, and that I can do it using a *cold* mould. I think this means lots to the poor dental patient who for any reason has lost the ones the Lord gave him and has to resort to "sto'-bought teeth." That I am ready to say to you that it is "dead easy"—if you know how—to cast a high-carat gold directly on a certain alloy and the two metals cannot be separated by any mechanical means, so perfect is the union. I hold that this is a great proposition in the work, and it alone is worth the price of admission. That, finally, experience has taught me that this is long enough to punish you, and so I'm through.

The paper was discussed by Drs. Everitt, Fleming, J. M., Alexander, Foster, Horton, H. V., Sherrill, Ramsay, Adair, Crenshaw, Fleming, A. H., Osborne, B. Holly Smith.

Dr. Robey announced that the Charlotte dentists would give a banquet on Friday night, to which every member of the Society was invited.

The Society then adjourned.

Afternoon Session.

The resignations of Drs. D. T. Smithwick and S. E. Douglas were read, and on motion of Dr. Everitt accepted.

A letter was read by the Secretary from the Dental Brief of St. Louis, making application for the publication of the papers read in Charlotte, signed by Burton Lee Thorpe, and on motion of Dr. Johnson, after some discussion, the proposition was accepted.

The resignation of Dr. W. B. Snipes was accepted, he having moved from the State.

Dr. J. D. Carlton read the following paper:

THE ADVANTAGES AND DISADVANTAGES OF PORCELAIN.

Dr. J. D. Carlton, Salisbury, N. C.

The progress which has been made by the members of the dental profession in behalf of humanity in the past few years is unprecedented, and no other branch of the profession which practises the healing art has made so great advancement as has the dental branch. This great advancement has been brought about by no one man or set of men in particular, but it has been the improvement of one man's ideas by another and another, and so on, until we are all, or should be, responsible for some of the dignity which the dental profession now assumes.

While the incentive for improvement has been only the comfort of mankind, the lines on which it has been carried out have been many. For instance, in orthodontia the methods of to-day would put to shame those used a few years ago, and the oral surgeon has improved the methods in his line until we are not able to circumscribe his powers. In the prosthetic branch the extent of improvement has been wonderful; but, to my mind, the greatest advancement has been made in the branch known as operative dentistry, or that branch which pertains to the saving of the natural teeth. In this branch the improvement in the methods and manner in which cavities are prepared for the reception of the different filling materials is only surpassed by the knowledge we have gained in the preparation and manipulation of the several materials we now use in this branch of the art. And it is of one of these materials and its use in this branch of the science which I wish to talk about to you to-day. I refer to porcelain.

Porcelain is now no new material in the hands of the dentist, for it has been used for years in the manufacture of artificial teeth, and it has been used for the filling of teeth for at least thirty years and perhaps longer, but for the latter purpose, until lately, by a limited number of dentists only. However, of late years many more of the members of the profession, seeing a great need of something better with which to save teeth than the metals, have taken up the study of porcelain, and are now using it with great satisfaction to themselves and to those whom they serve.

The first porcelain fillings we have any account of were ground from artificial teeth to fit the cavity, and were anchored in position and the joint corked with gold foil; and while we can all see the great amount of skill it would require to enable one to make a good filling in this way, yet the fillings did good service and were a source of great pride to the gentlemen who made them.

Afterward some members of the profession ground inlays from artificial teeth and from blocks of porcelain to fit the cavity they had previously prepared, and cemented them in much the same way we cement our inlays now; and while we can see how crude these inlays must have been, yet it was the best method that was known at the time.

While, as before stated, porcelain has been used by some dentists, and successfully, for quite a number of years, it is only of late years that this wonderful substance has become so popular as a material with which to restore the lost portions of natural teeth; and this popularity is, I think, greatly due to the results obtained by the pioneers in its use, and to the manufacturer in giving us the material in such convenient form for our use, as well as furnishing us with convenient apparatus with which to bake it. I am of the opinion that few of us who now make porcelain inlays would be as enthusiastic about it if we had to pulverize old teeth to get out material and then bake it in a coke furnace.

It is not our purpose to deal with the chemical composition and method of preparation of porcelain in this paper, but rather to speak of some of its physical properties and its methods of manipulation, as well as of its advantages over other filling materials now used by us.

The latter part of the above statement may lead some of you to think that I consider porcelain to be the only material the dentist needs in his efforts to save teeth, which would be an entirely ignorant opinion, for I believe there are many places where any other material would serve better than would porcelain; but I also believe that those places become fewer as we acquire skill in its use, just as the need for amalgam diminishes as the operator acquires skill in the manipulation of gold.

On account of the brittleness of porcelain, I would not advise its use in molar teeth when the margins of the cavity are exposed to the stress of mastication, nor would I advise its use in bicuspids when the margins are so exposed, but if I wanted to use this material in a bicuspid or molar I would so prepare the cavity that the margin of the inlay would be carried beyond the area of liability, for in most of the cases presented to you for restoration the tooth is decomposed to such an extent that you find it necessary to protect the frail walls by grinding away the cusps and replacing them with the filling. Especially is this true of the bicuspid teeth. However dangerous this practise may seem, some of the most satisfactory inlays we have made are in bicuspid teeth, when, after from one to four years of service, the margins are still perfect and the tooth apparently in as high a state of preservation as when the restoration was made.

For cavities in the six anterior teeth we find porcelain more strongly indicated than those in the posterior teeth; and, while it is not necessary, if we care anything for the esthetic effect of our operation, we

are forced to use porcelain: consequently our attention is more strongly centered in these teeth.

Of the cavities presenting themselves in the six anterior teeth, those known as labial cavities demand the use of porcelain more than any other. Next in importance comes the simple proximal cavity; and, although we see the need from an esthetic point of view for filling the proximal cavities which involve the incisal with this material, we have to take into consideration the amount of stress to be brought to bear, and the direction in which it will be applied, before we can safely decide what material may be used in restoration.

The first-mentioned class of cavities are the most difficult to contend with, on account of their extreme sensitiveness, and the difficulty we encounter in getting a true-fitting matrix is only surpassed by the difficulty we experience in getting the inlay shaded, so that when it is set the light will not be reflected on the cement.

The second class, or the simple proximals, are not so difficult to restore, if plenty of space is obtained and the cavity prepared in a manner that will permit the matrix being drawn in one direction. It is not so difficult to burnish a matrix for this kind of cavity; neither does the light problem enter so strongly into its final effect.

The third class, those including the incisal, are more easily prepared and less separation is necessary, as the walls of the cavity may be made parallel with the long axis of the tooth and the matrix removed with less liability of distortion than in any other.

In preparing any cavity for an inlay, the thing of most importance is the seating of the cavity, and this must be flat; the walls must be flat and as near at right angles to the seat as is possible for them to be made. Flat planes should be obtained to assure the strain when stress is applied, and the margins square and never beveled, as they are for gold fillings. Care should be taken that there are no undercuts to distort the matrix in its removal, and only in this latter respect does the preparation of a cavity for an inlay and one for a gold filling differ greatly. Therefore, any idea for retention you may have must be carried out with these facts in view.

In making a matrix, the kind of metal to be used depends on the kind of porcelain the inlay is to be made of. If low-fusing body is chosen the matrix may be made of gold, but if high-fusing body is to be used we must of necessity take platinum foil for our matrix; but there is little difference in the manipulation of these metals, and the methods used for one may be used for the other.

For the matrix choose a piece of metal large enough to go considerably beyond the margins of the cavity and begin the forming by working the metal against the deepest portion of the cavity, and from this point work the metal against the cavity walls from the center to the margins. After this is done, bend the overlapping portions down on the tooth and burnish the margins and the overplus against the

tooth with cotton pellets forced tightly into the cavity and with cotton pellets held in the pliers. The matrix being thus rudely formed, take it out and trim it to suit the case; then place it in the cavity again and burnish with cotton pellets as before, and follow this with the metal burnisher, being sure to work out all angles and retention grooves first before attending to the margins. Finish the burnishing by holding cotton tape tightly over the margins of the matrix and burnishing on this until all parts of the matrix fit against the tooth exactly.

The metal should never be annealed and the matrix never introduced into the cavity after the final burnishing, as it is too easy a matter to distort the matrix in so doing. The next step is choosing the colors to be used in the inlay, and this can only be done successfully by long experience, and we know of no way to give you any light on this subject other than to give you Dr. Reeves' injunction to look for underlying colors.

After colors are chosen, the building and baking absorbs our attention, and this is the important part of the process, for no matter how well you have prepared the cavity and forced the matrix, no matter how accurately you have selected the colors, you will, if proper precaution be not taken, distort the matrix and cause failure in the result. It must always be kept in mind that, in fusing, porcelain attempts to assume a globular form, and to prevent this action from pulling the matrix it is necessary to bake only a small portion on at first, and exert care in baking to see that the first building is carried to a full glaze. If this is done, the subsequent bakings are not liable to draw the metal.

The proper point to which to carry the fusing is another thing which you will have to learn by experience, but I prefer to have porcelain a little overfused than to have it underfused, for in the latter case it is liable to be porous and change color in time.

My main reason for the use of porcelain is the esthetic effect in the patient's mouth. How many beautiful faces become vulgar and repulsive when a smile permits the display of large gold fillings, or a gold crown, or a wide gold band over a Richmond crown, and perhaps all of these. Another reason for using porcelain is the extreme kindliness with which gum tissue takes to porcelain, and to prove this you have but to examine the gums about labial cavities which have been filled with gold and those which have been filled with porcelain.

Still another reason for the use of porcelain would seem to be sufficient, but there is still another one, and that is the advantage an inlay, gold or porcelain, has over a built-up filling, or one made in the mouth, which is the lessened liability of leakage at the margins and a consequent failure of the operation.

In finishing my remarks, I admonish you who have not tried this method of saving teeth to take up the work as soon as you go home, and give your patients the service they demand and deserve, and in so

doing you will find that you have yet to learn the most fascinating as well as the most gratifying method of saving some of the natural teeth, and one which will remunerate you in a financial way, if you learn to do it well.

Discussion was participated in by Drs. Hunt, Everitt, Frazier, Johnson, Fleming, A. H., Robey, Durham, Crenshaw, Osborne, B. Holly Smith and Carlton.

Dr. Wexler Smathers read the following paper:

SOMNOFORME, THE IDEAL ANÆSTHETIC FOR THE DENTIST.

Dr. Wexler Smathers, Asheville, N. C.

Somnoforme is a colorless volatile anæsthetic, having a pungent taste and a sweetish odor. It is composed of ethyl chlorid 60 per cent, methyl chlorid 35 per cent, and ethyl bromid 5 per cent. When in a compressed state it is a transparent fluid, but when released is a highly volatile gas, which when inhaled produces narcosis. It was discovered by Dr. George Rolland, dean of the Bordeaux Dental School, in 1895.

The action of ethyl and methyl in somnoforme is different from the action when used separately, and the death rate is much lower. Clinical reports from over 100,000 cases in which the respiration, heart action and blood pressure have been carefully noticed, show that the pulse is at first somewhat quickened, but soon returns to normal and so continues through anæsthesia and recovery. The blood pressure increases at first, but soon becomes normal again; the breathing is more rapid at first, but returns to nearly or quite normal.

Methyl chlorid secures promptness of action by diffusibility, so that somnoforme begins to exert its anæsthetic power in or about fifteen (15) seconds, the time it takes the red blood corpuscles to travel from the lungs to the nerve center, where anæsthesia is induced. The ethyl chlorid prolongs the anæsthesia, and the bromid produces a stage of analgesia, immediately following the anæsthesia, and of nearly equal value for light operating. The stage of analgesia is sometimes longer in duration than the period of anæsthesia.

Taking a practical view of the time required, I find it takes from 15 to 40 seconds to produce complete anæsthesia. We have at least three stages of anæsthesia in the administration of somnoforme. The preliminary stage is that degree of anæsthesia which is sufficient to dull the patient's response to ordinary nervous impulses, and might produce a slight form of muscular relaxation; but the nervous shock from even the early periods of tooth extraction is sufficient to arouse the nerve centers and to dispel the action of the anæsthetic. The patient then awakes at the beginning of the operation.

The preliminary or first stage of somnoforme anæsthesia is often induced by very few inhalations of somnoforme vapor, especially in susceptible patients, such as the anæmic, weak, neurotic, etc. It is readily induced by the first vapors inhaled.

Complete anæsthesia differs from preliminary anæsthesia, in that the somnoforme vapor has made sufficient impress on the nervous system to prevent it responding to the stimulus of operative measures. It may be of light or deep degree, according to the impress the somnoforme vapor has made on the nervous centers. For some operations, such as the extraction of one or two easily accessible teeth, the lancing of a gum, or some other brief operation, it is not often necessary to induce a degree as deep as that required for extended operations.

Experience and careful observation will soon enable the operator to attain very nearly the degree of anæsthesia required for brief operations, and, while anæsthesia will be complete, the patient will recover from it shortly after the operation is finished. In a light degree of complete anæsthesia muscular relaxation is generally though not always present, and when present is a sign of complete anæsthesia. The breathing becomes regular and automatic, but is not yet marked by snoring. The corneal reflex will probably not be abolished, but the eyeball will probably be rolled somewhat upward, the pupil dilated and incapable of focus or vision. In cases of alcoholics and tobacco users the features about the eyes may have a wild, frightened look. These latter patients will require more somnoforme to induce anæsthesia. Somnoforme should be administered to them past the stage of rigidity, until relaxation occurs. While no rule can be given as to when a light degree of complete anæsthesia should supervene, it frequently occurs after from three to five inhalations of somnoforme vapor, with valves closed. In some especially susceptible cases it occurs after a single deep inhalation.

Deep anæsthesia differs from the lighter degree, in that the somnoforme vapor makes a deeper impress on the nerve centers. It may require a longer administration of somnoforme, but in some specially susceptible cases it supervenes almost immediately. When this deep degree of anæsthesia is present the corneal reflex will be abolished, the eyeballs set in position and incapable of motion and sensation, and the pupils widely dilated. Muscular relaxation occurs in nearly all cases. The breathing, which becomes regular and automatic in a lighter degree of anæsthesia, is now marked by snoring, which results from the relaxation of the muscles governing the soft palate. Either of these signs—the setting of the eyeballs, muscular relaxation or snoring—may be regarded as a sign of complete, deep anæsthesia, and the operator may begin immediately, with the expectation of the maximum period of anæsthesia of which somnoforme is capable with that patient.

Deep somnoforme anæsthesia is followed by a period of analgesia during the first part of the return to consciousness, and light operating

may be continued during this period without causing pain, and a dentist who can make his practise painless can render wonderful services to his community and reap material advantages for himself. No practitioner in any other branch of medicine now inflicts so much pain on his patient as the dentist. The eye and ear men, the nose and throat men, the general surgeons and all those who perform painful operations are far ahead of us in this respect. For the welfare of our patients and ourselves it behooves us to take steps to catch up.

There's only one method by which the operative work in dentistry can be made practically painless. It is by the intelligent use of general anæsthetics. When I say this, I realize that it is a subject on which we are very backward. Few of us have much knowledge of this subject, and we have had but little opportunity to take up this very important branch of our practise since we left school. We feel that we are not well qualified; and, indeed, for the administration of many anæsthetics we are not. The dentist who undertakes the administration of chloroform or ether in his office, on his own responsibility, takes a serious risk. He should be well fitted by special training for such administration. But there are other anæsthetics, often referred to as dental anæsthetics, which are suited to the dentist's use. The administration of these anæsthetics makes less demand on him and is by no means so difficult. There are three of these anæsthetics. The oldest is nitrous oxid, administered alone. Then comes nitrous oxid, administered with definite percentages of oxygen. Then comes somnoforme. Before entering upon the advantages of somnoforme, let us consider for a moment the availability of general anæsthetics for operative work, eliminating for the time being the question of extraction.

It is probable that of the total pain caused by those who hear this lecture, seventy-five per cent is inflicted in operative work and not more than twenty-five per cent in actual extracting. We have no right to inflict this pain, when we can easily avoid it. Suppose that the avoidance of it does require us to learn to administer a general anæsthetic. Is that any effective reason for making our patients suffer? Are we to shun all difficult tasks?

Besides, learning to administer somnoforme is not so difficult. It is not nearly so difficult as to learn to make a first-class inlay, a good plate or a well-fitting crown. It should be easy for any of us with technical and clinical experience to learn to administer somnoforme in such a way as to relieve ninety per cent of the pain we now inflict. I may say, in passing, that the financial advantages reached by the dentist who appreciates the possibilities of painless dentistry are such that he may retire in a few years with a competence.

What would you do in the following cases? A child presents with the first molar so badly decayed that the pulp is affected and inflamed. The child has been awake for one or more nights, in almost continuous pain. She presents worn out and very much afraid. You must re-

move some decayed dentin before any application can afford relief. If you go about it in the usual way you cannot truthfully assure the child that you will not hurt her, because you know in your own heart that you will; and every slight hurt increases the child's terror. The very least pressure is recorded and magnified by nerves already inflamed, and therefore the attempt to remove dentin often ends in complete failures. If you cannot remove that dentin, this case must go on to an abscess. This is a very common thing, and it is done quite simply, so far as you are concerned. But if it were your child and I were to deliberately inflict on it as much pain as your dismissal causes that child to bear until the suppuration subsides, my life would not be safe at your hands. Nothing but a general anæsthetic will permit you to treat that case as it should be.

Here is another class of cases demanding your skilful services to prevent pain. Suppose that you or some other dentist had inserted a filling in a tooth which seemed normal at the time, but which began to "kick up" after a couple of days, and you find for the first time that the pulp is dead. The patient bears it for a day or two, thinking the pain is natural after the operation, but it grows worse, and the patient finally applies for relief. The tooth is so sore that it hurts to touch it with his tongue. It is elongated in the socket, and the patient cannot close the jaws without inflicting pain. He dislikes to have you go near it, for fear you may cause additional pain. You recognize the condition at once, and know that only an opening into that pulp chamber to permit the escape of gas will afford relief. If you attempt to make that opening by the ordinary method, in which the patient is called upon to "grin and bear it," you will inflict a great deal of pain, will leave a feeling of terror for the dentist which bodes ill for your future services to that patient, and will spend a great deal of valuable time in getting the tooth opened. The writer has known cases of this sort to take an hour, filled with almost continuous suffering on the part of the patient, either mental or physical, and accompanied by considerable nerve strain on the part of the dentist. The only intelligent method of handling such a case is to administer a general anæsthetic, making an opening without causing the patient any pain, and avoid the loss of valuable time.

Another very common class of cases is one where a cavity is to be prepared and part of the excavating comes in sensitive dentin. If you have recently had a bur run across that thin layer of dentin underlying the enamel, you know just exactly what that means to the patient. The patient can hardly bear it. Every time the bur goes to the cavity he thinks it's going to that sensitive spot. Sometimes the operation becomes so painful or the nerve strain on the part of the patient becomes so great that the patient is actually unable to bear it, and the cavity has to be left less well prepared than it should be.

There is not the slightest necessity for inflicting such pain, nor is there any necessity for the dentist to stand the nerve strain which

such operations cause; nor, in the third place, is there any necessity for the loss of time which a sensitive excavation always involves. A few whiffs of a general anæsthetic will take away the mental terror and the physical pain. It will relieve the dentist of the nervous strain and will permit him to do three times as much work as would otherwise be possible in the given length of time. There is not a dentist in this room who cannot learn to prevent all pain in such operations by means of somnoforme, if he will. There is not a man here who cannot learn to administer somnoforme with success for each painful operation.

Somnoforme has some characteristics which make it the anæsthetic *par excellence* for operative work. In the first place, the apparatus for administering it is very simple—much more simple than that for nitrous oxid or nitrous oxid with oxygen. There has recently been published a new text-book on general anæsthetics, written by Dr. De Ford, of Des Moines, Iowa, where he makes the administration of anæsthetics so plain that any dentist who will read it, or who will read the text-book published by the importers of somnoforme, can learn to administer it with great success.

The only other anæsthetic adapted for operative dentistry is nitrous oxid and oxygen, and, while this is a very safe anæsthetic, the apparatus for its administration is complicated. Its administration is so difficult that few indeed are the dentists who succeed with it.

Note the availability of somnoforme in the cases cited above. When the little child appears, tell her with sincerity that you will not hurt her; that you are going to give her some nice gas to smell of, and when she wakes up the tooth will be all fixed and will begin to get well. Talk to her as you would to your own child. After adjusting the mouth prop, give her a few inhalations of somnoforme to induce anæsthesia. Remove the dentin. If advisable, remove part of the pulp and make any proper application. If you have a fountain spittoon, adjust the saliva ejector in the mouth properly and you will be able to keep the mouth dry for treatment even of a lower molar. When the child wakes up, the tooth will be treated and the pain already beginning to subside. You will have won the child's confidence. She will come to you again without fear, and you have a standing in her eyes which is absolutely impossible for you to acquire at present. Not only this, but you will be able to get a fee for the operation and a fee for the anæsthetic.

Take the case where the inflamed tooth must be opened. A case like this sometimes comes in our office. It is a beautiful filling which we inserted a few days ago and were proud of its appearance at that time, not anticipating pulp trouble to follow. But the pulp was dead and the tooth had become extremely sensitive to the touch. The patient sits down in the chair with fear and careful explanation as to how sensitive the tooth is. We have to go on with remarks, "That's all right; I can fix that up for you in just a few minutes." Now, to

do this right and to keep from being caught in a story, we must apply somnoforme slowly for a little bit, then give two or three whiffs of pure somnoforme with valves closed. Then the opening can be made and relief obtained, and the patient comes to, more than delighted with the results; after which you couldn't keep that man away from a dental office when he needed anything done, and I might add that you couldn't keep him away from that particular office.

Take the preparation of sensitive cavities where you inflict a good deal of pain. You know what the time required for such work is—how you are compelled to stop and let the patient rest, and waste ten times the time actually needed for the excavation. It must be a large cavity the sensitive part of which cannot be excavated in a minute, if everything is ready. If you want to win your patient's hearty approbation and work a revolution in your practise, get the cavity ready, save for the sensitive parts, and get everything ready for working in those parts. Then give the patient a little somnoforme—enough to induce a light stage of anæsthesia, and complete the operation. If I were to attempt to tell you how beneficial such a practise is, you could not believe me, no matter how good your intentions, until you had experienced it.

There are a great many other operations in dentistry which inflict pain, but I have chosen these three merely as typical cases to enable us to make the application to all painful operations. Having given this outline of the possibilities, let me conclude by giving you a little conception of somnoforme and its advantages. I have already given the first of these by saying that the apparatus for administering it is very simple, not likely to get out of order, and easy of manipulation. The second advantage is that the induction time is short—usually from fifteen to forty seconds—and is not accompanied by asphyxia, as in the case with nitrous oxid proper. A part of this advantage is, also, that the operating time is comparatively long, and if the administration is accompanied by comforting suggestions by the dentist to produce the right frame of mind in the patient, the duration time will be surprisingly long—say from forty-five seconds to two minutes. Some dentists report that they are able to entirely remove a pulp and get the canal ready for dressing during the sleep following a single administration. (But that is too fast for me.)

A third advantage of great value is that the anæsthesia is profound. With some general anæsthetics the anæsthesia does not seem to be very profound. The patients claim to know what is going on, and they claim to be able to remember. This seems to have a bad influence on them and makes them dread to take the anæsthetic a second time. When somnoforme is properly administered, this is not the case. One of the advantages of somnoforme is that the heart and respiration are stimulated in such a way as to support people who are physically rather weak. Dentists who have become skilful in admin-

istering somnoforme do not hesitate to administer somnoforme where the use of other anæsthetics would be of doubtful safety.

Somnoforme has a unique characteristic, which is of great advantage to the dentist. It is that, following the true anæsthesia, there is a stage of analgesia. During this stage light operating may be completed without inflicting pain or without the patient remembering what was done. Where somnoforme is used for extracting, this stage is of utmost value. When extractions have been made where the tissues were inflamed, the pains following extraction are often as severe as those of the actual extracting. This analgesia stage often manifests itself by a desire on the part of the patient to rest for a few minutes after the administration. Before the return to complete sensibility these after-pains have frequently died down. This is of much greater importance than is generally recognized.

There is no cyanosis connected with the administration of somnoforme, and no swelling of the throat or tongue. Nitrous oxid causes these tissues to swell, by inducing edema. In those cases where the respiratory tract is clear, this is of no consequence; but in those cases where enlarged tonsils or adenoids have partly closed the respiratory tract, such swelling may become of great importance. The absence of such swelling under somnoforme is a decided advantage.

In cases where no hemorrhage has occurred in the mouth to fill the throat, somnoforme may be readministered at the same sitting. That is, if the operation is not quite completed and the patient shows signs of sensibility and recovering, the inhaler may be placed again to the mouth and a little more somnoforme given to continue anæsthesia until the operation can be completed. This is of great advantage where several cavities in sensitive dentin are to be prepared at one sitting. Reports from it indicate that when it is intelligently done, it is practically without ill effects.

So much for the characteristics of somnoforme as regards operation itself. Now, as regards recovery. It is certainly a wonderful relief to the dentist to have a patient recover properly and completely without nausea. When somnoforme has been administered properly, the anæsthesia will doubtless have been tranquil and the patient will either recover quickly and completely or will show a tendency to rest for a few minutes after the operation is complete. The pulse shows that there is not a sign of danger, and the dentist should allow the patient to rest for a little while, with the assurance that within a few minutes the patient will completely come to himself and be ready to depart. A finger on the pulse at this time will be the guide to his action, and while his patient is resting he will feel no uneasiness. Recovering from somnoforme in this way is complete in a short time, and the patient masters himself in a very few minutes.

Nausea may be avoided by two very simple precautions, even in cases of extraction. If there has been any hemorrhage in the mouth,

the patient should not be asked or forced to sit forward and asked to expectorate. The operator should be provided with suitable swabs and the mouth be cleaned from blood and mucous, and the patient be allowed to rest. If an antiseptic napkin be folded over the socket from which the hemorrhage proceeds the blood can be taken up as fast as it flows, and the patient permitted to rest until in command of himself.

Somnoforme is usually sold to the dentist in capsules or in bottles. The capsules contain what is theoretically considered enough for one administration for common use with the E. de Trey & Sons inhaler. The larger bottles contain enough somnoforme for from ten to fifteen administrations and can be used as desired by the operator. Full directions for administration will be found accompanying each inhaler sold.

Paper was discussed by Drs. Ware, Spurgeon, Foster, Ramsay, Robey, Carr, Geo. A., and Smathers.

The Society then adjourned to meet at 8.30 P. M.

Thursday Evening.

Dr. Spurgeon read the following paper:

ORTHODONTIA.

Dr. J. S. Spurgeon, Hillsboro, N. C.

Three years ago, at our meeting in Waynesville, I submitted a paper on this subject; and, in view of the ideas expressed at that time, and the discussions that followed, and in view of the great changes that have occurred in our profession since that time, it seems especially appropriate and I am especially pleased to have the opportunity and the honor to submit a few remarks on the same subject at this time.

First, let me remind you that a new era has dawned on the dental profession. The real growth in dentistry is of comparatively recent years. In fact, the dental profession is just beginning to write the most important chapter in its history. And I am fully convinced that the foundation principles of dentistry is now and will continue to be based on a correct understanding of the correct principles of orthodontia, which are based on normal occlusion.

These foundation principles have changed so radically and so rapidly that we are just now marking time on a plane so different and yet so fascinating that we dare not speak loudly or our hopes

might vanish. We are all more or less familiar with the principles that make the new era in operative dentistry. Why, just a few years ago only the greatest dreamer could have had visions of what is a reality to-day in the restoration of decayed and lost tooth substance.

I believe I am conservative when I say that to-day nine-tenths of the restorations that give comfort, service and durability would only a few years back have been extracted. But when I say to you that the new era in orthodontia marks a greater epoch and is of far more importance to our profession and will be of greater benefit to the coming generation, do you believe it? Can you imagine that it is true? If not, please follow me for a short time and see if I can give you any help in that direction.

Go where you will—go to the thinly settled rural districts or go to the crowded thoroughfares of our great cities—and you constantly come in contact with disfigured and contorted faces that might have been made symmetrical, if not beautiful. They might have been made to give a more pleasing and more intelligent expression. It is an old maxim that a woman's face is her fortune; and if that be true only in part, cannot the same thing be said with equal force in regard to all classes and conditions of men and women? And do you not believe that a man or woman with well-balanced features has a greater chance to succeed and live with better environments than one with distorted face and mutilated mouth? Indeed, can any person have a greater handicap through life than to be compelled to carry with him forever a disfigured face or a mutilated mouth? The face gives expression to character and to the intellect; but if the features be distorted, that character, that intellect cannot be expressed. The mouth also gives expression to character and intelligence. How can the mouth give the true index to expression of character and intellect when it is handicapped by bad occlusion or injudicious extraction?

Now, don't understand me to say that smooth features will make a man or woman more intelligent, but it will make the intelligence they have much more apparent and will be of more service to them. So that, I think it a rational conclusion to reach to say that the fate of many a person is determined by the features of the face—the expression. And when we see how many people are afflicted in this way, how vast the need of our services, and how badly we have neglected it, well might we open our eyes and ask the reason why.

It is not my purpose to discuss here the causes of malocclusion, such as mouth breathing, adenoids, premature extraction, or heredity, but to try to enforce upon every one present the necessity of a thorough study of the subject, so that we may have the ability to successfully and intelligently give the proper assistance to nature at the proper time, so that all our patients may have the benefit of this great science that this great and new era entitles them to. Again, it is not my purpose to go into the technique of the different schools of orthodontia, but I would urge a thorough study of the subject, and

will go over a few of the well-known facts that should guide us in beginning this work.

First, I will remind you of what is the greatest and perhaps most important fact in regard to this subject. It was discovered and set forth fully by Dr. E. A. Angle, of St. Louis, Mo. He says that it is a law so plain and so simple that all can understand and apply it. "It is that the best balance and best harmony, the best proportions of the mouth, in its relations to the other features, require that there shall be the full complement of teeth, and that each tooth shall be made to occupy its normal position, normal occlusion." "This law may be regarded as one of the corner-stones of the new school of orthodontia." The correctness of this rule, Dr. Angle says, will be better appreciated if we will remember that in those cases where nature has succeeded in building a normal denture, teeth in normal occlusion, she has also succeeded in building it in best harmony with the lines of the face, and that the teeth in these cases are noticeable marks of beauty. And I am prepared to go further and say that while all faces of the above type are not beautiful, they are at least pleasant in expression and add much to the intellectual appearance. And when we observe in how few cases nature succeeds in establishing this correct occlusion, then we see how vast is the field in which our services are required. Some writers go so far as to say that even the temporary teeth, when not in correct occlusion, should be put there by mechanical interference. Of this I have no experience, but I believe the principle is correct, because, in order for the arches to expand properly, they must have nature's forces extended in the proper direction. These forces cannot exert in the proper direction unless properly directed. And how can they be directed unless all nature's forces are properly applied? And let me say right here that if your appliances are properly adjusted any child will wear them cheerfully and complain very little. In fact, if the force is judiciously applied, there will be practically no pain. It is certainly no more than any one is willing to endure when they know the improvement and benefit that is sure to follow. One thing I do know: that is, begin early. When the first permanent molars come, if they are not in proper occlusion, right then is the time to put them right. It is easy then, and the time required is short, compared with what will have to be done if you leave them till later. By beginning early you assist nature in building a perfect arch. If you wait till later you have to change the structure after it has been built.

And now, in conclusion, perhaps some may argue that the average practitioner should not do this kind of work; that he has neither the time or inclination to be bothered with it. Let me assure you that he has the one and should have the other, for it does not consume much time. And if you understand the situation and go at it right, it will give you little or no worry. Through the efforts of Dr. Angle and Dr. Jackson, orthodontia has become an exact science, and there is no

guesswork about it. You may know just what ought to be done and just what you can do. And the opportunities to improve the features, facial lines, speech, health and beauty are so great, and the appreciation of your patients and their friends is so great, that it will many times repay you for the time and labor you have put on it. I know of no service that you can render that is so sincerely appreciated. Let us do our best to assist nature to build a perfect arch.

The paper was discussed by Drs. Betts, Bogle, Wheeler, Jones, Osborne, Crenshaw, Eby, Spurgeon.

The next paper on the programme was read by Dr. F. W. Eubanks as follows:

A PLEA FOR DENTAL PROPHYLAXIS.

Dr. F. W. Eubanks, Hendersonville, N. C.

In taking up the subject of dental prophylaxis, it must be borne in mind that the field cannot be covered in *minutia* in one paper; therefore, it shall be the object of this paper to touch upon the more important points of practical applicability in our daily work in all its branches.

Gould defines "prophylaxis" as prevention of disease. As the purport of this paper is to touch upon preventive measures in general, not being limited to disease only, but abnormal conditions that may arise from faulty procedures, this definition will not be closely adhered to. The science of bacteriology teaches us that we have enemies in the microscopic world that are eternally seeking to destroy our ease or cause our death. With this knowledge (to be forewarned is to be forearmed), is it not high time we, as dentists, should put ourselves upon a higher plane than that of being skilled artisans?

Our brothers of the healing art—medicine—have bestirred themselves, and as a result we no longer fear the plague, cholera, yellow fever, etc. Tuberculosis, which at one time in the history of Italy slew its thousands, has been, in that country, brought under control by prophylactic measures. It is needless to enter into details of preventive medicine, except so far as it pertains to dentistry.

Many there are in this enlightened age who scorn the germ theory; and yet, gentlemen, those same practitioners are confronted almost daily with the work of the organisms of the microscopic world. A case presents itself—a decomposing pulp. The operator proceeds at once to open into the pulp chamber without first bathing the cavity with an efficient antiseptic (some do put on the cofferdam), removing the contents of the root canal with a broach that had been used a number of times before (without having once been sterilized), pumping the effete matter through the apical foramen into the peridental

membrane, sealing a wisp of cotton, saturated with some medicament, into the canal, and discharging the patient. Sequel: Patient returns, in course of next twenty-four hours, with considerable infiltration of tissues (not to mention pain, etc.). The operator looks wise; changes the treatment. This is kept up for a week or more. In the meantime the physician is called in to administer a hypnotic—morphin. Wherein lay the prime cause? Was it not due to a lack of prophylactic treatment? Had the contents of the pulp chamber and root canals been thoroughly saturated with an efficient antiseptic, rendering inert this effete matter, this *bete noir*—alveolar abscess—would not have occurred.

It is of the greatest importance that every instrument, napkin, impression tray, wax, or modeling compound—in fact, anything introduced in the mouth—should be surgically clean, it matters not whether the previous patients were free from specific disease or not. It is a recognized fact that the mouth is an excellent incubator—giving the proper moisture, temperature and pabulum—for the development of bacteria. This being the case, upon the introduction of germs—which have been merely surviving—into the incubator with temperature, moisture and proper pabulum, they become active, energetic, and destructive. We then have disease; it may be a gingivitis; it may be much more serious—a specific infection.

According to Pfeiffer, the bacilli of influenza occur in large numbers in the sputum of patients afflicted with that disease. This is a common affliction; and unless care is exercised in the thorough cleaning of instruments, it is easily transmitted, though not commonly taken in this way.

One of the most dreaded of the microscopic world is the tubercle bacilli. They are also found in the oral cavity. The diplococcus pneumoniæ, of Frankel, is the exciting cause of a whole series of diseases and may be transmitted from the mouth of one patient to another.

Loffler's bacillus of diphtheria is not only found in the mouth of a diphtheritic, but also occasionally, although few in number, in a healthy person. Should some of these few, in a healthy person, be conveyed to the mouth of a patient who is in an atonic condition, we would be responsible for one of the several diseases that this bacillus produces, one of which is met with in our own practise, namely, stomatitis ulcerosa. Bernheim has found two organisms constantly present in this disease, one of which closely resembles the diphtheritic bacillus, except that it is larger.

Next we come to one of the most virulent of communicable diseases—syphillis. When it is recognized that this disease may be communicated by the mere contact of the lips with a drinking glass, how important, then, is it that we take the precaution against our instruments. A slight abrasion of the mucous membrane of the oral cavity or the lips, and an instrument that is non-sterile after having been in

the mouth of one in whom we do not find the characteristic signs (for the infection is present at times without the marked characteristic signs to warn us)—what then? Is it not the nobler work to prevent rather than to give the treatment?

We hear on every side expressions, from dentists, of dissatisfaction because our work is not fully recognized by the medical fraternity. "Let us be up and doing, with a heart for any fate." Let us take the lead, in prophylaxis, if need be, and we shall be recognized not only by the medical fraternity, but the laity, as a body of men of scientific attainment. Use sterile instruments always. So much for preventive medicine, as applicable to dentistry.

A word with reference to prophylactic measures against the cause of to-day and the effect of to-morrow, the too early extraction of temporary teeth, thereby causing arrested maxillary or mandibular development, with resulting malocclusion.

Instruct your patients regarding the importance of giving attention to the teeth of children at an early age. Even the young infant should have its mouth cleansed regularly, long before the eruption of the teeth. When the teeth have erupted, the parent should teach the child the proper use of the brush (and the dentist should teach the parent). Almost daily in our practise we meet with children who are taught, intentionally or otherwise, that the dentist is the one survivor of the Spanish Inquisition. It is then difficult to treat these little sufferers as they should be. In desperation, we are sometimes tempted to turn to our forceps and quickly remove a tooth that could and should be saved until the proper time for its exfoliation. Take a moment off, and think of the probable injury to that child in after life, and that tooth will be saved, even if you have to first win the confidence of that patient by dint of exercising superhuman self-control.

Do we not daily see what malocclusion has been caused by the removal of even one tooth in a person of more mature age? What must be the effect of a too early removal of the temporary ones, and at a time of greatest activity on the part of the constructive cells?

Would that I were gifted with ten times—yea, a thousand times—the convincing power that it is the lot of man to enjoy. I would not only convince you, but every person with whom I conversed, of the crying need for prophylactic treatment in all branches of dentistry. If you cannot give it, under existing fees, raise your fees, but do not remain blind to this imperative cry of the race yet unborn. Read your journals and see what prophylaxis has done for humanity, and also the appalling results where preventatives are not used.

The paper was discussed by Drs. Fleming, A. H., Carr, Geo. A., Watkins, Osborne, Johnson and Eubanks.

A paper was then read by Dr. Highsmith as follows:

A MECHANICAL DENTURE: REPORT OF CASE.

J. R. Highsmith, D. D. S., Fayetteville, N. C.

The case to which I desire to call your attention to-day is probably not unlike a limited number of those which come at some time under the observation of every practitioner; therefore, it is by no means new, but as the method I used has been successful in overcoming what might in many cases prove quite difficult, I think it might be of interest to some one whose duty it might become to deal with abnormal conditions of a like nature.

The case I have in mind is that of a lady thirty-five years old. She had an almost perfect set of teeth in both arches. About three years ago she was attacked by an inflammatory condition in her right superior maxillary bone, which resulted in necrosis; and her physicians, deeming an operation necessary, took her to a hospital and removed the affected portions of the bone, which included the alveolar process and a large portion of the anterior part of the palatine process of the right superior maxillary bone, thus leaving a large opening into the antrum of Highmore and the inferior and middle meati on the right side. After the operation the patient was turned over to me for further treatment and replacement of her upper teeth, as it had been found necessary, before the operation, on account of the progressive nature of the necrotic condition, to extract all teeth from the upper jaw. About eight months after the operation the patient came to my office, and upon examination I found the tissues all healed and in an apparently healthy condition, but, of course, leaving a large opening communicating with the antrum, the inferior meatus, the middle meatus and the nasal cavity. I found that the opening had been made on the labial surface, just above the alveolar ridge, so that the soft or fleshy portions of the palatal surface and of the ridge had not been cut away, but were, of course, soft and easily movable, on account of the removal of their bony foundation, and they were also sunken and out of shape and position. When the lip was raised, drawing the soft tissues away, there was an opening about an inch and a half in diameter leading into the cavity, which was considerably larger, and the alveolar process of bone was all gone except a small part at the back, which was just enough to allow a plate to rest on it firmly at that point. I selected an impression tray approximating as nearly as possible the size and shape required. I then packed the cavity with cotton, leaving it so that the impression material could enter it only a short distance at the opening. Then I very carefully took a plaster impression of the mouth. Making a plaster cast and bite plate, I took the bite, making it rather shorter than in ordinary cases, and continued the technique as in ordinary vulcanite dentures, except that I made it considerably thicker around the labial margins, so that in finishing the plate I was able to leave a thick, smooth rim all around. When the plate was finished and fitted into the mouth, I found that,

after a little trimming at some points, it was comfortable and the suction fairly good. I dismissed the case, requesting her to let me see her again in two weeks. She was anxious to wear it, and after two weeks' persistent effort she returned to my office, and upon examination I found that the tissues had adapted themselves nicely to the plate and the suction was so much improved as to give practically no trouble at all. The case was then permanently dismissed.

According to her physician's diagnosis, the maxillary necrosis was of specific origin and was no doubt acquired, as she formerly had a normal set of teeth, and there was, so far as I was able to distinguish, nothing to indicate a specific trouble of a congenital nature.

This, however, is of no interest to us now, as we are not dealing with the case from a pathalogical standpoint. Some authorities advise, in these cases, that the plate be allowed to extend into the cavity, claiming that the suction will be better. Others think it best that the cavity be left open, giving it an opportunity to close. But the method described above appealed to me from a common-sense viewpoint, and the satisfactory results lead me to believe that it is a good one, the suction being good and at the same time leaving the cavity open.

As to the probability of the cavity closing up, my experience with such cases it too limited to express a decided opinion; but, of five similar cases, ranging from two days' to four years' standing, which have come under my observation, not one of them had closed nor seemed to exhibit any great tendency in that direction.

In taking the impression for this case I varied from my usual method, which is to take an impression of the mouth in modeling compound, make a cast, swage a tray upon this, and use the tray thus made to take another more accurate impression in modeling compound from which to make the plate; but here I could not get an accurate impression in modeling compound, on account of the flexible condition of some of the soft tissues. I packed the cavity with cotton, for two reasons: first, I did not care for an impression of the cavity; second, the cavity being larger inside than at the opening, I feared some difficulty in removing it after the plaster had become hard. This denture has been in service nearly two years; and about six months ago I was called upon to replace two broken incisor teeth on it, which had, according to her statement, been broken while biting a bone, thus showing that it is of value in biting as well as in the ordinary process of mastication.

One of the most important things to be considered in these cases is the impression. Time and thought expended upon this initial step will not be spent in vain. The necessity for accuracy in this part of the work is even greater than in ordinary cases, and at the same time it requires greater skill, because of the flexible condition of the soft tissues not underlaid with bone. I think plaster of paris is the best material to use, because, if inserted at the proper moment, it offers less resistance to the normal position of the easily movable tissues

than would any of the heat-softening materials. A small amount of coloring matter, such as vermilion or bluine, added to the plaster before mixing, will have no bad effect, and is perhaps better as a guide in separating than coating the impression with shellac varnish.

I have seen but little said in text-books about such cases. In the American Text-Book of Prosthetic Dentistry the only thing approaching the subject is the chapter by Dr. Ottolengui upon cleft palate and the making of obturators and artificial vela, and this chapter deals principally with cleft palate of congenital origin and acquired cases where the soft palate is involved. So I hope the discussion of this paper may bring out some practical ideas which have been learned in the school of experience.

The paper was discussed by Drs. Johnson, Carr, Geo. A., and Highsmith.

Society then adjourned.

Friday Morning Session.

The first business of the session was the reading of a paper by Dr. D. K. Lockhart as follows:

A FEW THOUGHTS ON DENTAL EDUCATION.

D. K. Lockhart, D. D. S., Asheboro, N. C.

At the present time a great deal is being said about the work of the dental colleges and the kind of degree that the graduates of the schools should receive. Those of us who read the journals and keep up with the proceedings of the different societies cannot but notice the vast difference of ideas the leading men of the profession have on this subject. Even such eminent men as Drs. Black, Kirk and Talbot sing different kinds of songs. At first we might judge that this difference of opinion is an unfortunate state of affairs, but it is rather a good sign that the profession is going to advance in the future even more than it has in the past; for when many good men begin to work along the same line, the best possible plan is sure to be worked out, and this will be adopted by the best colleges, and then the other colleges will be forced to do the same kind of work.

The prominent dentists and the dental societies of one of our neighboring States have been working to make a great change in the college work and the State requirements in their State. They say that as it is now the whole system is wrong: that before a man shall obtain license to practise dentistry he must have the M. D. degree. They

have even petitioned their State Legislature to pass a law requiring this. They claim that the colleges can arrange their work so that the future dentist can in four years' time do the work for and receive his M. D. degree, and that in the meantime he can learn and acquire enough additional knowledge and skill to make him a good dentist. The advocates of this plan say that one of the advantages of this will be that the dentist will have the same standing as the physician. Just what good this closer relationship will do the public or the dental profession is not made clear. We all admit that the dentist of the future must know more about histology, pathology, bacteriology and general medicine, but certainly there are some things that the medical practitioner must thoroughly understand that could never do the dentist any good. Of what advantage would it be to the dentist to know how to manage a case of obstetrics or to reduce a hernia? Just about as much as it would do a physician to know how to construct and set a gold inlay.

What, then, is to be the outcome, and what must the colleges do to place the dental profession abreast of the other scientific professions? Let the dental schools require the same educational qualifications of their matriculates and give them an equal amount of work and require the same time to be devoted to obtaining the D. D. S. as the medical colleges require for the M. D. degree. Then, and not till then, will the D. D. S. mean what it should.

A few years ago, when the college course was put up to four years, most of the men who had studied the subject were satisfied that it was a step in the right direction; but when some of the colleges raised such a cry of distress, the mistake of dropping to the three-year course was made—a mistake that will sooner or later have to be corrected.

Looking at the work of the dental schools from the standpoint of those who are engaged in their work, it would seem that they are doing about all that could be expected of them, for most of the colleges are laboring under great difficulties. The schools are not endowed and many of the teachers are good and able men, who are working almost without money and without price. Even though the adoption of the four-year course will be a great hardship on some of the colleges for a few years, it is sure to come, and the quicker the better it will be for the schools, as well as the profession and the public. We should not criticise too harshly the mistakes of the colleges, but let us join hands with them and all work together, that our younger brethren who are just starting in the work may be fully as well equipped and have as much scientific knowledge and training as their cousins with the M. D. degree.

The paper was discussed by Drs. Norris and Lockhart.

The next paper was read by Dr. L. L. Dameron as follows:

CAPPING EXPOSED PULPS AND TREATING ROOT CANALS.

Dr. L. L. Dameron.

(Unfortunately, this paper was lost and could not be replaced.)

The paper was discussed by Drs. Everitt, Fleming, J. M., Powell, Harris, Hartsell, Hunt, Alexander, Dameron.

Dr. Robey invited the entire membership to a car ride, provided by the Entertainment Committee of the Charlotte dentists.

Dr. J. G. Reid then read the following paper:

PATHOLOGY AND THERAPEUTICS IN DENTISTRY.

(With cases cited and method of treatment.)

J. G. Reid, D. D. S., Marion, N. C.

There was a time in the history of our country when a dental practitioner was, in most cases, a jeweler as well, and held himself out to the people as dentist and jeweler, to extract teeth, etc. From that dentistry rose to a highly developed technical branch of medicine, and to-day we have in the combination of practical and theoretical dentistry a science of universally recognized importance.

Pathology and therapeutics are two branches of dental science that have done as much as, if not more, than any other branches of dentistry to accomplish this result and give it its present high standing. Under this head I will report two cases which have been under my care and treatment.

Mr. A., a gentleman about forty-five years of age, was brought to my office by one of our physicians, and I was asked to diagnose the case. After a thorough diagnosis, I found the seat of the trouble to be in the region of the maxillary sinus. The gentleman being addicted to the use of strong drink, and at the time threatened with erysipelas, I extracted a promise from him to take the Keeley cure or govern his thirst for "mountain dew." I then proceeded to remove the left sixth-year molar, all the teeth being sound. After removing the tooth, I placed a large bur in the engine, first thoroughly sterilizing it; then I made through the palatine socket an opening about the size of a small lead pencil, passing into the maxillary sinus. I then washed out with tepid water, following with hydrogen dioxid; then with listerine, diluted about one-half. After a few days I saw the patient. The condition was much relieved, especially the erysipelatous symptoms. After a few weeks, in consultation with the physician, we diagnosed the case to be a malignant growth in the maxillary sinus. We then advised him to go to the hospital, which he did. Dr. Hunter McGuire,

of Richmond, Va., confirmed our diagnosis and removed part of the superior maxilla. The operation was a success, as most of Dr. McGuire's cases are, and for several days the patient showed improvement; but, owing to the depraved condition of his system, endocarditis set in and he died. This case was in the first years of my practise.

Another case was that of Mrs. B., who came to my office, complaining of the right upper sixth-year molar, badly broken down. A thorough diagnosis revealed all the symptoms of a blind abscess. Upon removing the tooth, a large sack came away with the palatine root. I washed out the socket with hydrogen dioxid and followed with glyco-thymoline, and dismissed the patient, as she complained of nothing more. I asked her to report if the lesion gave her any further annoyance. In about three or four weeks she came in, saying the socket of the extracted tooth had given her very little trouble, but that did not seem to be healing over. Upon examination, I found an opening into the maxillary sinus, and learned also that her family physician had treated her for about eighteen months for catarrh, and that she had thought all this trouble in the region of the maxillary sinus to be due to the catarrh. It was not until I had plied her with questions that I learned these facts. For the treatment of this case I took an extra large bur in the engine, first sterilizing thoroughly, went in through the opening already made, and trimmed the roughened surface of the floor of the maxillary sinus. After thoroughly satisfying myself that there was no necrosis, I thoroughly washed out the maxillary sinus with tepid water, following with hydrogen dioxid, then with glyco-thymoline. I found the natural opening into the nose greatly inflamed, and had more trouble in healing this than that into the maxillary sinus. After I was through with the maxillary sinus and was healing the opening through which I had been applying treatment, I treated the opening from the sinus into the nose by throwing with my curved Davidson spray and compressed-air outfit a solution into this opening, which caused it to heal readily. The patient was dismissed, after a few days, entirely well.

The discussion was joined in by Drs. W. B. Ramsay, Hunt, Wheeler, McConnell and Reid.

Dr. Everitt announced the receipt of the resignation of Dr. Chas. A. Bland, but moved instead of accepting his resignation that he be made an honorary member. Motion was carried, and the same action was taken as regards the membership of Dr. M. A. Bland.

Dr. J. N. Johnson then read his paper as follows:

LIFE OF DR. B. F. ARRINGTON.

J. N. Johnson, D. D. S., Goldsboro, N. C.

Mr. President and Gentlemen of the North Carolina Dental Association:

Since our last meeting, time has dealt kindly with our Society, inasmuch as the grim reaper has not visited our immediate midst; yet, since we were assembled together at Morehead City, one year ago, one of the best men, one of the greatest lights associated with the dental history of the South has been called to his "home eternal in the heavens." I refer to the man that was a friend to you all and to the dearest friend I have ever had—Dr. B. F. Arrington, of Goldsboro, N. C., who died October 29, 1907.

What dentistry is to-day in the United States, in the Southern States, and in North Carolina especially, is in a great measure due to the untiring efforts of this good man in behalf of his profession.

If there were not many present that knew and admired Dr. Arrington for his intrinsic worth, his connection with the history of our association and with those things in the history of our profession that makes dentistry what it is to-day, would demand that I bring his name before this convention and, in part, outline his life and work.

Dr. Arrington was born in Nash County, N. C., September 11, 1827. His parents removed to Tennessee while he was quite young, and he was reared there, although he spent much of his time with his grandmother in this State. He read medicine under Dr. Cutler, of Dresden, Tenn., and completed his course at the old Transylvania Medical College at Lexington, Ky., from which he graduated in 1848. He then practised in Kentucky. At a later period he took up the study of dentistry and graduated from the Baltimore College of Dental Surgery in 1853. He then located at Goldsboro, N. C., where he practised both medicine and dentistry until 1858. In this year he gave up the practise of medicine, and, with the exception of a little hospital work during the war, devoted himself to the practise of dentistry for the remainder of his life—a half-century.

The half-century that preceded Dr. Arrington's advent into the profession, we know that it groveled in the mire of inexperience and ignorance. It tottered in its attempt to walk alongside the older professions. It even failed to secure the self-respect of those engaged in it. It had no social life and was without character.

For the past fifty years we have forged to the front, possibly overstepping all other professions. In the front rank must be placed organization as the means whereby this progress has been accomplished. The weakness of previous decades was due to isolated work.

The first history we have of an organization in the South was that of the old Southern Dental Association, organized in 1866.

Dr. Arrington was traveling the Southern States for S. S. White in

1865-66. He saw the need of an organized body. Having a fine education, a magnificent address and a mentality superior to most men then, or now, in active practise, as he traveled from State to State, from town to town, he sought to bring the dentists together, in order that the knowledge of the whole might be fused for the benefit of the individual and for the elevation of the profession. The first result of his efforts was a meeting held in the office of a local dentist at Atlanta, Ga. There were six dentists present. Plans were perfected for a permanent organization, to be known as the Southern Dental Association. He was urged to accept the first presidency, but refused, on the grounds that he was not then in active practise, when, be it said to the lasting credit of the men that composed the first permanent organization, they elected his brother, Dr. William Arrington, as a measure of gratitude toward the man that did the work, yet was magnanimous enough to refuse the honor. This, however, was characteristic of the man. He cared nothing for personal aggrandizement, and in the affairs of men generally judged them as they should be, rather than as they are. He was a gentleman of the old school, the embodiment of kindness and courtesy. The term, "a gentleman and a scholar," was never applied with more truth than to him. The struggling student, the young dentist making a start in life never had a safer counsellor or a better friend than he.

During the year 1866 he was instrumental in organizing the first dental society in North Carolina and was its first president. But the days of reconstruction were at hand; this fair domain of ours was under the tyrant's heel. The slight fabric of unity that he had created could not be held together, and, like all Southern interests, was for the time paralyzed.

When our shattered and broken men began to recuperate from four years of strife and starvation and ten years of a damnable "carpet-bag" and negro domination—a travesty upon justice that shocked the civilized world—the indomitable courage of the Southern-born began to assert itself. The clouds began to rift, and as the first sunbeam of hope began to cast its rays along a pathway leading to a reclamation of our rights and privileges, this good man was found again in the forefront of the fight, using every effort to amalgamate the dentists of North Carolina, and it was through his efforts that we were reorganized at Beaufort in 1875, where he was again made president of the North Carolina Dental Association. This makes him the parent cell of our Society—a monument to his memory and an organization in which he felt a great interest, and of which he was justly proud.

Perhaps the greatest service he ever rendered his profession was during the Civil War. His friend, Dr. J. W. Hunter, a young man without means, was being forced into that little unpleasantness against his will. He appealed to Dr. Arrington for advice and assistance, and he was advised to refuse to do military duty. Dr. Arrington at the time located at Raleigh, wrote the brief, claiming dentistry to be an

exact specialty of medicine, and furnished the money—nearly one hundred dollars—to carry the case to the higher tribunal, where Chief Justice Richmond Pearson decided that his contentions were right and that a dentist was exempt from military and jury duty—the first decision of the kind ever rendered in the United States giving to dentistry the legitimate right to professional distinction.

Dr. Arrington was the inventor of the Arrington amalgam and was one of the pioneers in this work. He originated the Arrington and the Johnson toothbrush, and was perhaps the first man in the United States that ever had a bayonet forcep made. He also invented the Arrington smooth-edge scaler, for the treatment of alveolar pyorrhœa, and was the originator of this method of treatment.

The last ten years of his life he treated Riggs disease as a specialty, and I will say, from experience and observation, that in the treatment of his specialty he stood without a peer. Usually men whose minds are possessed with some one subject take an exaggerated view of its importance, but such was not the case with him. Early in life he saw the ravages of Riggs disease upon the teeth and health of the laiety and sought to perfect a method of treatment that would give relief and perfect a cure. His work along this line is a monument to his memory that will live when we have all passed to that "bourne from which no traveler ever returns."

Touching remarks were made by Drs. Hall, Dameron, Turner, McConnell and Betts.

Dr. J. M. Fleming moved that a copy of the published report of the memorial be sent to the family of Dr. Arrington. Motion was carried.

Dr. Griffith moved that a committee of three be appointed to draft a suitable, short memorial to be spread upon the minutes of the Society. Motion was carried, and the chair appointed Drs. Johnson, Griffith and Jones.

The annual election of officers was then taken up, and the following were elected:

President—Dr. F. L. Hunt.

First Vice-President—Dr. I. W. Jameison.

Second Vice-President—Dr. R. G. Sherrill.

Secretary—Dr. J. C. Watkins.

Treasurer—Dr. C. P. Norris.

Essayist—Dr. F. W. Eubanks.

Members of Examining Board—Dr. J. N. Johnson was elected to succeed Dr. Hilliard; Dr. E. J. Tucker was elected

to succeed himself; Dr. J. H. Wheeler was elected to fill the unexpired term of Dr. C. A. Bland, resigned.

Place of Meeting—Asheville.

Time of Meeting to be decided by the Executive Committee.

The President appointed the following committee to audit the Treasurer's books: Drs. Harris, Dameron and Norris.

On motion of Dr. Alexander it was decided to ask that the next meeting of the National Dental Society be held in Charlotte.

The Society then adjourned.

Friday Evening Session.

Dr. J. H. Wheeler made a timely talk on the subject of Ethics, and remarks were also made by Dr. White, of Elizabeth City.

The report on President's Address was read as follows:

REPORT OF COMMITTEE ON PRESIDENT'S ADDRESS.

Mr. President and Members of North Carolina Dental Society:

Your committee has carefully examined the eloquent and masterful address of President D. L. James, and, after due deliberation, desires to make the following report:

The recommendation that the proceedings of this meeting and a short synopsis of 1906 and 1907 meetings be published is a wise one. That an Educational Committee be appointed to confer with the State Board of Education and Superintendents of Public Instruction in the various counties, with a view to securing better dental educational facilities, and that a Press Committee be appointed, received our hearty approval.

H. V. Horton, *Chairman;*
C. F. Smithson,
F. L. Hunt.

The Treasurer then made his report as follows:

TREASURER'S REPORT.

Amount on hand last report	$ 45.58
Received for membership	105.00
Dues	399.00
Notes	185.00
Total	$734.58

DISBURSEMENTS.

Paid stenographer at Morehead	$ 42.70	
Jamestown Convention	100.00	
Membership fees returned	20.00	
Treasurer's bond	5.00	
Prosecuting illegal practitioners	160.29	
Ledger	5.00	
Notes	185.00	
Interest on notes	9.59	
Treasurer's expenses	2.80	
Treasurer's salary	25.00	
Secretary's salary	50.00	
		605.38
Balance on hand		$129.20

This July 3, 1908. R. M. MORROW, *Treasurer.*

The committee appointed to audit the Treasurer's books reported that they were found correct.

Dr. Jameison made the following report of the clinics:

REPORT OF SUPERVISOR OF CLINICS.

1st. Removing nerve, Supr. right first molar and immediate filling canals, "Cocaine Anæsthesia," by Dr. D. E. McConnell, of Gastonia. Operation a very decided success, and the patient well pleased.

2d. Gold filling (Ketton Williams' gold), grinding surface Infr. right first molar, by Dr. J. W. Stanley, Wilmington, N. C. A very beautiful filling.

3d. Porcelain filling, distal surface, right Spr. lateral, by Dr. F. L. Hunt, Asheville, N. C. A perfect filling from every *viewpoint.*

4th. Extraction of roots (Howe system); about twenty roots extracted. Dr. J. E. Wyche, of Greensboro.

5th. Many teeth extracted by Dr. Wexler Smathers, of Asheville, N. C. Somnoforme used as anæsthetic. Dr. Smathers demonstrated the various uses in which somnoforme is employed.

6th. Dr. J. N. Johnson, of Goldsboro, treated a case of Riggs disease surgically, to the entire satisfaction of all. We feel sure the patient will recover.

7th. I regret the clinics by Dr. R. E. Ware, of Shelby, could not be given, as the patient became sick and could not stand the work.

8th. Epulis of lower jaw, between second and third molars (left side) removed by Dr. S. W. Foster, of Atlanta. Somnoforme administered by Dr. Wexler Smathers, of Asheville. The operation was a splendid success.

9th. Table clinic, "Cast Inlays." Dr. J. C. Osborne, of Lawndale.

10th. Table clinics, "Porcelain Inlays." Dr. C. B. Mott, of Statesville.

11th. Table clinics, "The Possibilities of Machine-Cast Gold." Dr. A. H. Fleming, of Louisburg.

12th. Table clinics, "The Saddle Bridge, When to Be Used." Dr. T. A. Apple, of Winston-Salem.

13th. "Moss Fibre Gold Inlays." Dr. C. L. Alexander, Charlotte.

14th. "A New Method of Filling Porcelain Teeth With Gold." Dr. J. H. Brooks, of Burlington.

I. W. Jameison.

The report was accepted, and a vote of thanks given Dr. Jameison.

The Treasurer reported the following names dropped for non-payment of dues: Dr. J. T. McCracken, H. Snell, W. T. Herndon, B. F. Hall, R. J. Morrison, H. R. Parker, J. T. Pittard.

Dr. Everitt moved that a vote of thanks be tendered the Charlotte dentists for the hospitality so graciously shown. Motion was carried.

Dr. Johnson, after congratulating Dr. James on the success of his meeting, declared he had "won his spurs," and so presented him with a pair.

Dr. James accepted the gift in fitting language, and this pleasant incident closed the business of the meeting.

The new officers were then installed as elected, and the President, Dr. Hunt, appointed the following committees:

Executive—J. D. Carlton, C. F. Smithson, D. L. James.

Ethics—R. E. Ware, J. S. Spurgeon, R. M. Squires.

Prosecuting Committee—J. Martin Fleming.

Press Committee—A. H. Fleming.

Supervisor of Clinics—B. J. Durham.

Dr. Johnson moved that Mr. F. R. McCullough be made an honorary member. Motion carried.

The Society then adjourned *sine die*.

New members elected at Charlotte in 1908:

J. T. Underwood
J. H. White
D. F. Watson
Jas. D. Gregg
P. I. Darden
M. D. Hargrove
H. M. Hendrix
W. E. Hines
A. M. Berryhill
J. M. Neal
R. H. McLaughlin
R. M. Waldroup
Paul W. Troutman
W. C. Fitzgerald
C. R. Zeigler
Sibley Smathers
Louis J. Pegram

Names of applicants who passed State Board of Dental Examiners in 1908:

Allen, R. E., East Bend, N. C.
Ashburn, T. F., Liberty, N. C.
Ayer, J. M., New York (reissued).
Biddix, J. C., Marion, N. C.
Burks, R. H., Asheville, N. C.
Coble, L. G., Burlington, N. C.
Cripliver, W. L. Lexington, N. C.
Darden, P. I., Newton Grove, N. C.
David, J. L., Bowersville, Ga.
Fitzgerald, Paul, Micra, N. C.
Foster, M. S., Cardinal, Va.
Frost, J. S., Mocksville, N. C.
Funderburk, J. E., Lancaster, N. C.
Gregg, J. D., Liberty, N. C.
Hargrove, M. L., Clinton, N. C.
Hendrix, H. M., Concord, N. C.
Hines, W. E., Warren, N. C.
Howle, Eugene B., Raleigh, N. C.

Hughes, J. M., Laurel Mills, Va.
Lasley, F. A., Giden, N. C.
Manning, M. P., ———, North Carolina.
Martin, W. T. Hamptonville, N. C.
McCall, S. H., Marion, N. C. (reissued).
McGuire, Daisy Z., Asheville, N. C.
Neel, J. M., Salisbury, N. C.
Pegram, Louis J., Raleigh, N. C.
Petty, G. E., Java, Va.
Reynolds, R. L., Chatane, Va.
Schaeffer, C. T. (colored), Asheville, N. C.
Smathers, G. S., Asheville, N. C.
Smithson, Thos. W., Rocky Mount, N. C.
Summerlin, M. T., Berrien, Ga.
Troutman, P. W., Statesville, N. C.
Underwood, J. T. Newton Grove, N. C.
Waldroup, R. M., Bryson City, N. C.
Watson, S. R., Lake Landing, N. C.
Wells, C. H., Gaffney, S. C.
Whitt, W. E., Swords Creek, Va.
Widgen, W. B., Virginia.
Williams, E. L., Monroe, N. C.
Wood, Ia., Cliffside, N. C.